# INDUSTRIAL EQUIPMENT NEWS

JANUARY - 1951
VOL. 19 • NO. 1

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

## What's New IN EQUIPMENT, PARTS, MATERIALS

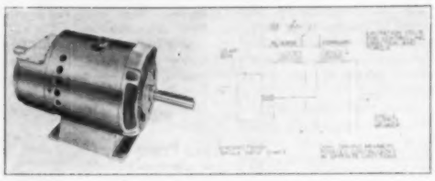
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries


BREVITY—Identify by IEN-1 if you write the maker

### DRIVE . . Magnetic-particle clutch for reversing use or two speed output

**Source: VICKERS ELECTRIC DIVISION**
**1813-17 Locust St., St. Louis 3, Mo.**



**Reversing action** from a non-reversing constant-speed power input or non-reversing two-speed output is provided by new dual assembly of the company's Magneclutch, previously described IEN-7172-50. A typical unit is shown in the illustration with a schematic view of the arrangement for reversing output. Each assembly is designed to meet a given set of operating requirements following study by the company's engineers.

**The two driving members** on the input side of the reversing assembly are geared and mounted to rotate continuously in opposite directions. Both ride free from the output side until one or the other is energized by closing its control circuit at a convenient remote location. The unit on closed circuit then engages the low-inertia output member for action free from backlash. Forward and reverse speeds can be specified. So also can the two forward speeds when the assembly is set up for two-speed single-direction drive.

**The assembly shown** measures about 22¾ in. in overall length by 9 in. in body diameter. It weighs 115 pounds. Maximum speed is 2,000 rpm. Temperature rise in the coils is 85 deg. C., 40 deg. C. ambient. Torque rating is 32 ft. lb. for "on-off" service with 800 amp. turns of dc. coil excitation and 30 watts of coil power. The rating is 9.5 ft. lb. in "slip" service with 300 watts of slip dissipation, 700 amp. turns of dc. coil excitation and 30 watts of slip dissipation.

**Bulletin 6000,** 36 pages, presents excellent illustrated explanation of the clutch, its principle of operation, the design factors, ratings and characteristics, application in servomechanisms, brakes and transmissions. Performance and dimensional data are provided in illustrated detail. Forms to list specifications for estimate are inserted.

BREVITY—Identify by IEN-2 if you write the maker

### CONSTRUCTION . . Power shovel, mounts on tractor to dig and load

**Source: SHERMAN PRODUCTS INC.**
**3202 W. 14 Mile Road, Royal Oak, Mich.**

**Power Digger** is a new shovel with reach capacity to 10 ft. back of the tractor on which it is mounted, with depth capacity to 8 ft. below ground level. Lift is through a 140-deg. arc, combined with turn to the side, to load into a standard dump truck. All of the movements are by hydraulic pressure supplied by the pump that is part of the shovel assembly and connects to the tractor's power takeoff. Half-throttle speed at the tractor engine supplies sufficient power. A stabilizer frame on tractor lift arms takes the digging thrust.

**The hoe-type shovel** is 18 in. in width and has 3½ cu. ft. capacity. It can be applied in general excavating, trench digging, loading operations. It has been designed to serve in requirements between hand operations and the larger power shovels. It can be assembled on a tractor or removed from it in about 20 min. to leave the tractor clear.


FIGHT POLIO MARCH OF DIMES

**YOUR HELP NEEDED**

**Last year was the third in a row for record number of polio cases. There still remain 30,000 cases from previous years needing care. Your help is needed for the 1951 March of Dimes this month to fight infantile paralysis.**


BREVITY—Identify by IEN-3 if you write the maker

### PLATING . . Machine and solution to chromium plate small tools, parts

**Source: WARD LEONARD ELECTRIC CO.**
**29-33 South St., Mount Vernon, N. Y.**

**Cutting tools,** measuring tools, small tool and machine parts are all points for application of this new No. 20 Chromaster chromium-plating machine and its Chromasol concentrate solution. Both are available from the company's new Industrial Chrome Division which has been established to operate under exclusive license for manufacture and sale from Chromecraft Corporation.

**Normal life** of average cutting tools can be multiplied by 3 to 10 times following a 1½-min. immersion in the plating solution after thoroughly cleaning the tool. Gages and machine parts such as small gears can be protected against wear so they will provide many times their maximum unplated life. The machine has capacity to plate up to 10 sq. in. of metal surface at a time at the recommended current density of 2 amp. per square inch.

**Operation** is on a 110-volt single-phase 60-cycle ac. circuit to a selenium rectifier. The assembly includes the plating tank, rheostat, timer, ammeter and a reversing switch for stripping action. The chromium deposit can be controlled within .001 inch. Rate of deposit is constant at .002 in. per hour. The solution is supplied in concentrated form to be diluted with water. No previous plating experience is required.

BREVITY—Identify by IEN-4 if you write the maker

### CONTROL . . Electronic hygrometer to measure and control moisture in air

**Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.**
**4456 Wayne Ave., Philadelphia 44, Pa.**

**Electrodes** made of gold leaf in the shape of combs, interlocked and facing inward, are mounted on a clear plastic plate to form the sensing element in the company's new electronic hygrometer. The teeth in one electrode parallel but do not touch those in the other and over them all is a thin coating of chemical salts. A minute change occurs in current passing through the salts between the electrodes as moisture increases or decreases in the air covering the element face. This change is employed with suitable amplification to operate the company's single-point ElectronIK recorder-controller.

**The equipment** reads relative humidity direct without the need for psychrometric charts. It can be installed with distances to 1,000 ft. separating sensing element and controller. Minimum range is 20 per cent relative humidity in an overall range between 20 and 93 per cent. Overall temperature range is between 50 and 120 deg. F. Responsiveness is sufficiently rapid to register 63 per cent of total change in 10 seconds. The sensing element is generally unaffected in corrosive atmospheres in industrial working areas.

BREVITY—Identify by IEN-5 if you write the maker

### ETCHING . . Alkaline compound for aluminum, minimizes scale in tank

**Source: DIVERSEY CORP.**
**1818-22 Roscoe St., Chicago 13, Ill.**

**Minimizes etch tank maintenance**

**Aluminux** is a new alkaline etching compound for surface finishing aluminum parts and sheet materials. It is supplied in white granular form for solution in water in work immersing tanks which are maintained at an elevated temperature by steam coils. The material is characterized by the fact that it will not form scale or sludge in the tank. It produces a fine even etch on the aluminum, eliminates all tool and die marks. The degree of etch can be controlled by varying solution concentration, time of immersion and temperature of the solution to produce the effect desired.


*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*


## WHAT DO YOU NEED?

**READER SERVICE FORM . . Look between pages 16 and 17 or 88 and 89 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.**

•

### From a Manufacturing Executive

"Industrial Equipment News has been exceedingly helpful to us due to our distance from large cities, inasmuch as we can find out where different things are made. In some cases we have a general idea of what we need for a certain job, but do not know where it can be obtained or who makes it. We value your publication very highly."

•

### Departments


**READER SERVICE FORM** — Pages 16-17 and 88-89
To assist you in securing the information you want

**SUBJECT INDEX** — Page 102
Products and services listed by name and by function

**SOURCES OF SUPPLY** — Page 4
Let us help you find the things you need currently

**NEWS NOTES** — Page 24
Reviews of unusually helpful literature and services

**NEW LITERATURE** — Page 70
Condensed reviews of current manufacturers' catalogs

**"I WISH I HAD"** — Page 104
Requests we cannot answer, printed in the hope you can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### Our selections in this issue


**CARBIDE PARTS** — Page 3
Made of titanium, strong, shock resistant at 1,800 deg. F.

**COMPRESSOR** — Page 89
Motor driven duplex, 350 to 10,000 cfm., is roller bearing

**CONSTRUCTION** — Page 98
Electric tractor, engine drive for earth moving equipment

**DRAFTING** — Page 5
Engineering service makes isometric instruction drawings

**LAPPING** — Page 2
Production attachments extend range of standard machine

**PRINTING** — Page 17
Belt feed machine makes contact prints, rates 11½ inches

**SELLING** — Page 36
Manual of 380 pages on how to sell to the Government

**SIGNALING** — Page 85
Optical fire detectors and control to warn, extinguish

**TESTING** — Page 55
Melting point meter for waxes, plastics to 500 deg. F.

**THERMOMETER** — Page 63
Resistance design measures superheat in steam or vapor

**TIMING** — Page 35
Electric clock recorder marks attendance and job cards

**TRUCK** — Page 14
Engine driven tractor rides on road and on railroad track



W. E. Smith, V. Pres. & Editor — F. Morse Smith, V. Pres. in Charge

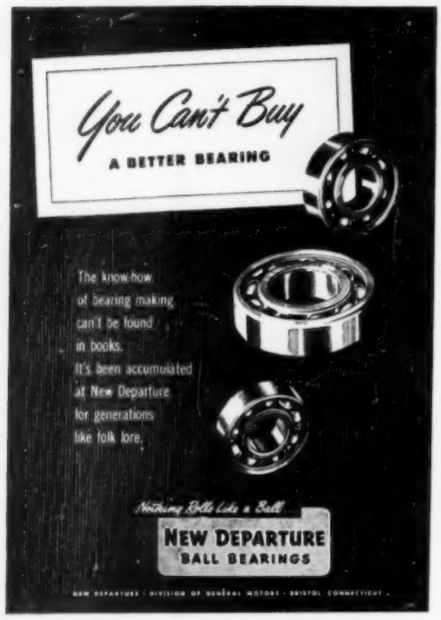
THOMAS PUBLISHING COMPANY

461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546


FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* _____
- ☐ *Production Mr.* _____
- ☐ *Engineering Mr.* _____
- ☐ *Product Design Mr.* _____
- ☐ *Purchasing Mr.* _____
- ☐ _____

BREVITY—Identify by IEN - 6 If you write the maker




BREVITY—Identify by IEN - 7 If you write the maker

# FREE! 32-PAGE HANDBOOK

## SHOWS HOW TO STOP CONDENSATION DRIP

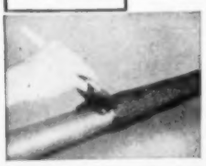
NO Drip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

**LOW COST — EASY TO APPLY**

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes of equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.



**HANDBOOK SHOWS HOW**

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

*Send for your Free Handbook Now!*

**J. W. MORTELL CO.**

*Technical Coatings Since 1895*

**Dept. IE, Kankakee, Ill.**

BREVITY—Identify by IEN - 8 If you write the maker

# WEBB---A 4-LETTER WORD FOR DEPENDABILITY

Webb's advanced engineering and modern manufacturing methods have paced industry's demand for better conveyor equipment. For over 30 years Webb has accented DEPENDABILITY and functional design in every component part with resulting longer life — and continual production line operation. Specify WEBB — and be sure of the best. Send for Catalog No. 46.

One-half trolley illustrated

Section of WEBB trolley. The flangeless, hardened steel wheel has eight 15/32" alloy steel balls in the large precision ground races. Double labyrinth grease seals prevent lubricant leakage. Drop-forged high alloy steel brackets complete this exceptionally sturdy assembly.

WEBB CONVEYORS

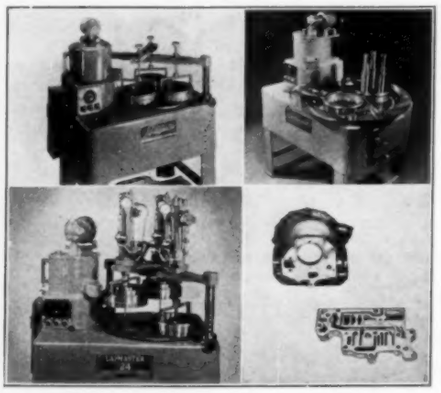
OFFICES IN PRINCIPAL CITIES
8915 ALPINE AVE.
DETROIT 4, MICH.

MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS

BREVITY—Identify by IEN - 9 If you write the maker

# LAPPING . . Production attachments extend work range of standard machine

**Source: CRANE PACKING CO.**
**1815 Cuyler Ave., Chicago 13, Ill.**



**New attachments** have been developed and new applications have been made with the company's Lapmaster precision lapping machine since its initial description IEN-12829-48. The machine itself remains essentially as it was, to the upper left in the illustration. It consists of the motor-driven lap plate on which conditioning rings are positioned in a manner that leaves them free to turn and to be located toward or away from center to continuously condition the lap plate during the work cycle. It includes a compound tank and motor-driven agitator that feeds the lapping compound down a wire to the lap plate. Seven sizes mount 12 to 72-in. lapping tables. Work to be lapped is located inside the three rings for operation under its own weight or with plates on top.

**Productive operation** is assisted by the new air-operated lifts which are shown connected to the conditioning rings and pressure-plate units in the view to the lower left. These lifts apply particularly well when the work pieces are small. They help in the loading and unloading in connection with Micarta work holders which can be preloaded and slid as a unit into and out of lapping position while each ring and pressure-plate unit is held up.

**Long work pieces,** to be lapped on their ends, can be handled at the same time as smaller flat pieces when the conditioning rings are located by the roller attachment shown to the upper right.

**Large work pieces,** such as the engine parts to the lower right, can be handled also in this setup, one piece inside each ring on the lapping table. One of the parts shown measures about 27 in. across, the other is about 10 in. In greatest dimension. The faces of both are finished with sufficient accuracy in the lapping operation so they can be assembled on mating faces similarly finished without gaskets.

**The company** is prepared to advise on prospective work and to make test runs in its own plant as the basis for judgment on given applications without obligation.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

**FIND WHAT YOU WANT?**

Note our suggestions at the top of the index, page 102

BREVITY—Identify by IEN - 10 If you write the maker

# JUST 7 INCHES HIGH

THE DUFF-NORTON

# "Shorty" JACK

LIFTS HEAVY LOADS IN LOW HEIGHTS

Yes . . . the new "Shorty" Jack is just 7" high and weighs only 22 lbs.—yet it will lift heavy loads weighing up to 15 tons. Note the low height application at left in which 3 jacks were used.

Write today for Bulletin AD-12-G.

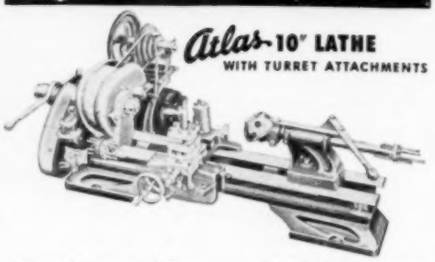
THE DUFF-NORTON MANUFACTURING CO.

Main Plant and General Offices: PITTSBURGH 30, PA. Canadian Plant: TORONTO, ONT.

*"The House that Jacks Built"*

BREVITY—Identify by IEN - 11 If you write the maker

# LOWEST COST SEMI-AUTOMATIC TURRET LATHE



**Atlas-10" LATHE WITH TURRET ATTACHMENTS**

Every feature needed to handle small parts production *quickly* and *economically* is provided by this Atlas 10" lathe with turret attachments. It's the ideal low-cost solution to today's small parts production problems.

Headstock spindle is Timken roller bearing equipped to stand up through round-the-clock production runs. Heaviest back gears of any 10" lathe permits *heavier cuts.* 16 spindle speeds (28 to 1072 RPM) give correct speed for every operation. Complete V-belt drive. Spindle hole takes stock up to 15/16".

See how this rugged, precision-built Atlas can save you money on small part production runs. Send for latest catalog with complete details.

**Atlas Press Co.**
381 N. PITCHER ST.
KALAMAZOO, MICHIGAN

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

BREVITY—Identify by IEN - 12 If you write the maker

# Fire fighter *for blazes in flammable liquids*

MORE EFFECTIVE DISCHARGE PATTERN

*Kidde* Dry Chemical Extinguisher gives trigger-finger control, more effective discharge pattern, easy recharging in the field and dry chemical powder that stops fire fast. Write for free literature.

**Kidde**

Walter Kidde & Company, Inc. • 136 Main St., Belleville 9, N. J.

BREVITY—Identify by IEN - 13 If you write the maker

# BRAZED IN LESS THAN 60 SECONDS . . . with EASY-FLO 45

THE REFILLABLE SPRAY BOMB at right is mass produced by the RE-ALL Corp., Houston, Texas, in quick time—thanks to the exceptional free-flowing properties and fast penetrating action of the low-temperature silver brazing alloy, EASY-FLO 45.

*LEFT*—Steel shell and heavy-wall steel tube are joined with two EASY-FLO 45 wire rings (arrows) preplaced. Both joints are brazed simultaneously with automatic gas-air burner heating in under 1 minute.

*RIGHT* — Assembly of two brass screw machine parts and brass tube is brazed with oxyacetylene torch and EASY-FLO 45 fed by hand, in 15 seconds.

**SEND FOR THIS NEW BULLETIN 20**

It gives the whole remarkable story about EASY-FLO brazing plus a lot of valuable information about joint design and fast heating and production methods. Write for a copy today.

**HANDY & HARMAN** 82 Fulton St., New York 7, N. Y.

BREVITY—Identify by IEN - 14 If you write the maker


"U.S.A.F. No. 41065-B?

IT'S A SNAP WITH A TENNEY TEST CHAMBER"

This Tenney variable temperature chamber was designed and built to run environmental tests for high and low temperature (Group 10 & 20), on electronic equipment components, in accordance with 41065-B. Specified range from —103°F. to +200°F. Sizes from 3 cu. ft. to walk-in rooms.

Thanks to a long, solid background of building test equipment, Tenney chambers more than meet the toughest government and industrial specifications. Explosion, altitude, mildew resistance, humidity, salt spray tests . . . all these and many others are precision-controlled with standard Tenney equipment. Combinations of basic units meet complex requirements. Tenney program control provides the automatic means for close regulation of changing conditions. Tenney's engineering staff is always available for consultation and help. Literature and further information upon request. *Write to Tenney Engineering, Inc., Dep't. C, 26 Avenue B, Newark 5, New Jersey.*

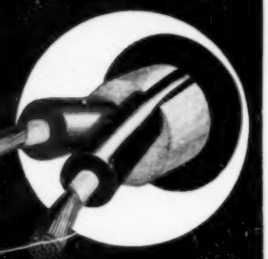
Engineers and Manufacturers of Automatic Temperature, Humidity and Pressure Control Equipment

Tenney


BREVITY—Identify by IEN - 15 If you write the maker


SECURITYFLEX

the tough portable cord



- *It won't kink.*
- *Long life under continuous flexing.*
- *Insulation resists heat.*
- *Neoprene jacket licks oil, water, abrasion, sunlight, weather.*

Give your tools the cord that's tough — give them Securityflex*. Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

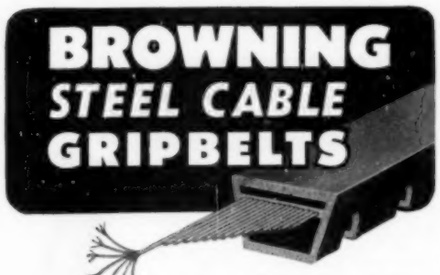
*Reg. U. S. Pat. Off. 50341 Rev.

The right cable for the job

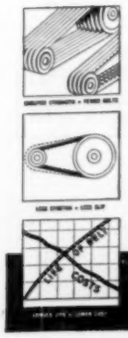
ANACONDA® WIRE AND CABLE


BREVITY—Identify by IEN - 16 If you write the maker


BROWNING STEEL CABLE GRIPBELTS



MORE *Strength* • LESS *Stretch*



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

*Write* FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY


BREVITY—Identify by IEN - 17 If you write the maker

## PACKAGING . . Rubberized curled hair molded to protect delicate equipment

**Source:** BLOCKSOM & CO.
Cannel & 5th Sts., Michigan City, Ind.

**Molded enclosures,** in sectional form as shown in the illustration, and rectangular pads or sheets of the company's material Paratex have been added to its lines originally developed for use in upholstery. The material consists of rubberized curled hair molded to shape to cushion delicate instruments, glass products, bottles and fragile containers. It is available also in pads measuring 24 by 72 in. and 48 by 72 inches.

**Three consistencies** are soft, medium and firm. The company is prepared to develop and supply suitable designs to meet specified requirements for any product.

BREVITY—Identify by IEN - 18 If you write the maker

## CARBIDE PARTS . . Made of titanium, strong, shock resistant at 1,800 deg. F.

**Source:** KENNAMETAL INC.
100 Lloyd Ave., Latrobe, Pa.

**Bulletin 1050 sent on request**

**Kentanium** trade names new titanium carbide. It is employed in manufacture of rods, tubes, flats by extruding, in simple shapes by molding and in more intricate forms by machining compressed powder slugs. The material can be ground for final finish employing diamond wheels.

**Sizes** range to ¾ in. in tubes by 36 in. in length, nozzle parts to 5 in. in diameter by 6 in. in length. Other parts such as crucibles, hot-extrusion die inserts bushings, thermocouple protection tubes, blades, valves, valve seats, balls can be specified to meet requirements.

**Bulletin 1050,** 4 pages, presents illustrations of typical parts, description of the carbide, its compositions and properties.

BREVITY—Identify by IEN - 19 If you write the maker

## SIGNALING . . Decalcomania to warn of danger on vehicle or in plant area

**Source:** MEYERCORD CO.
5321-25 W. Lake St., Chicago 44, Ill.

**Yellow and black** striping show in bold relief on a motor vehicle or in a dangerous plant area when set up by means of 30 by 48-in. decalcomania sheets now available from the company. The sheets can be cut to fit. The principal point for application at the present time is on the rear of trucks, particularly those handling dangerous materials.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 20 If you write the maker

News Advertisement by Rigidized Metals Corporation

## FREE MANUAL . . On metal processed for more square feet per pound

**Source:** RIGIDIZED METALS CORPORATION
656-60 Ohio St., Buffalo 3, N. Y.

**Conservation of metals** in short supply, such as nickel, is a feature of Rigidized Metals. Our process of design-strengthening and texturing metal sheet and strip makes it possible for you to secure strength and rigidity for less poundage.

**"How"** is described in the illustrated pages of this new 12-page manual on the process itself, materials that can be handled, examples of production cost reduction, possible major product improvement.

**Illustrations** show available designs, typical applications and explain the improvement made in mechanical properties by redistribution of metal in the sheet or strip as a result of the processing.

**Particularly we suggest** your study of the Idea Chart occupying a page of the manual. In it we have compiled actual product applications for Rigidized Metals along with the product manufacturers' stated reasons.

**Just write IEN-11528,** into your reader service form with this issue of Industrial Equipment News or note the number in your letter to us. If you write direct and can tell us what you have in mind perhaps we can give you specific data and a sample or two of the processed metal.

BREVITY—Identify by IEN - 21 If you write the maker


LUBRICATION ECONOMY

"LUBRIPLATE saved us $2,098.16 in seven months"

The BROWN COMPANY, Quality Paper Makers of Berlin, New Hampshire, said this in an operating report on one of their Kraft Mill Lime Kilns after changing over from conventional oil lubrication to LUBRIPLATE No. 130AA. Huge savings like this cannot be overlooked. It is worth your while to see what LUBRIPLATE Lubrication can save you.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

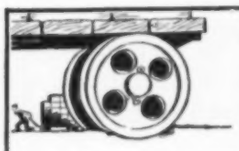
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

*The Different LUBRICANT!*

DEALERS EVERYWHERE, consult your Classified Telephone Book


BREVITY—Identify by IEN - 22 If you write the maker

IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Albany • Bethlehem, Pa. • Birmingham • Boston • Chicago • Dallas Houston • Indianapolis • Jackson, Miss. • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • St. Louis • Washington D. C.


BREVITY—Identify by IEN - 23 If you write the maker


NEW BENCH-TYPE END FINISHING MACHINE DESIGNED AND BUILT BY PINES

*Saves Time* on deburring, facing, chamfering, center drilling, reaming operations . . .

Designed to speed tube, pipe, and rod end-finishing work of any size or length up to 2" diameter. Has a new-type chuck and clamping unit, automatic swing-type stock stop, interchangeable jaw inserts, multiple tool holders, precision spindle bearings, ½ hp. motor, 8-speed sheave. Portable, weighs only 170 lbs. Fast, easy to operate, has quick change-over features. Forward movement of operating lever, clamps piece, removes stock stop, feeds work to cutters. Operator always has one hand free for loading. Saves time. Typical production: 400-500 tube ends per hour. Speeds output.

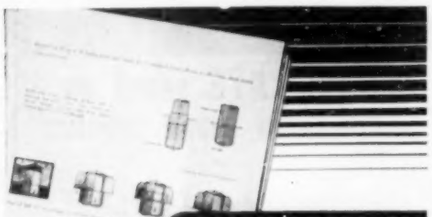
*Write for Free Bulletin*

PINES ENGINEERING CO., Inc.
Specialists in Tube Finishing Equipment
601 WALNUT AURORA, ILLINOIS

Get more facts today on this new cost-cutting tool. Larger models up to 5" capacity also available.

For long-run work ask for data on semi-automatic models with foot switch control.

BREVITY—Identify by IEN - 24 if you write the maker



DESIGN PROBLEMS PLAGUE ALL OF US

To serve well, a machine part—even when made of good steel, properly treated—must be properly designed.

A new 72 page booklet, sent free on request, discusses the vital relation between design, good steel and its satisfactory treatment.

good design + good steel + good treatment = satisfaction

This booklet sent to you FREE

Climax Molybdenum Company
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F 24

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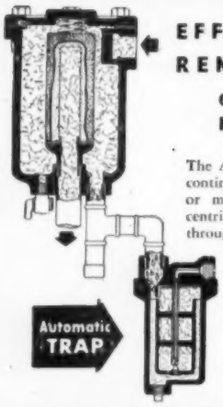
Poro-Stone Filtration
FOR COMPRESSED AIR




EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

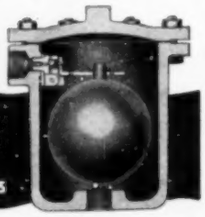
The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 26 if you write the maker

GET BETTER SERVICE FROM SERVICE PIPING



with CRANE automatic vent and drain valves

WORKING PRESSURES: 1 to 150 Pounds as Air Vent Valves; 1 to 125 Pounds as Water Drain Valves

Liquid in air lines . . . or air in liquid systems . . . can seriously hinder piping efficiency and low-cost productivity. Either of these conditions can be remedied easily and economically by equipping piping systems with Crane Automatic Air Vent or Water Drain Valves.

Moderately priced and easy to install, these valves require only routine maintenance . . quickly pay for themselves in reduced labor costs, and by more effective application of fluid services. For complete information, see your new Crane Catalog, or: WRITE FOR CIRCULAR AD-1815.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
*Branches and Wholesalers Serving All Industrial Areas*

*EVERYTHING FOR EVERY PIPING SYSTEM*

CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

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CCA The Original IEN FOUNDED 1933 CCA

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 JANUARY 1951 No. 1

## Sources of Supply

Each day's mail, for some time now, has been bringing us news of changes in established sources of supply as materials and manufactured products go back on the restricted lists and as additional manufacturers convert to armament production. Accordingly, our opener for 1951 is to suggest that you let us help you find new sources and replacements for the things you need no longer are available from previous sources.

We offer this service in your interests and in addition to our regular reporting of new products. Many of you are using it now. We will be happy to add others. Just tell us what you are looking for. Write or call or use the reader service form. Give us a bit of background to help make constructive suggestions. Ask about any industrial subject. We have worked with very fair success on quite a range. Here are some recent examples—

| IEN reader's plant is — | He wants names of makers for — |
|---|---|
| Electronic | Cubical partition equipment |
| Chemicals | Decimal hour stopwatch |
| Laboratory | Under-water electromagnet |
| Steel mill | Box car door opener |
| Research | Motor driven display |
| Textiles | Control for snow melting |
| Refractories | Telephone booth |
| Sporting goods | Rubber cutting pads |
| Rat poisons | Wheat processing kettles |
| Government | Vibration measuring tube |
| Chemicals | Wired seals for valves |
| Bedding | Cutter for mass of rayon |
| Instruments | Toroidal coil winder |
| Machinery | Link connected V-belt |
| Smelter | Magnesium dockboard |
| Bags | Pipe thawing equipment |
| Public utility | Portable saw attachment |
| Water meters | Drum head opener |
| Cellular rubber | Flexible plastic jars |
| Foundry | Air testing equipment |
| Plastics | Tube slitting machine |
| Meat packing | Salt handling conveyor |
| Government | Static eliminator |
| Machinery | Scale plant layouts |
| Foods | Walnut processing machine |
| Glass | Vacuum pickup device |
| Leather | Coating for spray booth |
| Aluminum | Air slide conveyor |
| Steel mill | Variable torque drive |
| Electrical | Solder feeding gun |
| Fountain pens | Neoprene wheel coating |
| Packers | Grader for peanuts |
| Machinery | Baseball winder |
| Clothing | Janitor equipment |
| Atomic energy | Industrial television |

Tell us now if you have a current problem on sources or on procedure. Keep us in mind for questions that may come up in the future. Let us know if you need fast action and we will see you get it for the things you need to do things with in 1951.

W. E. Irish.

BREVITY—Identify by IEN - 27 if you write the maker

HIGH EFFICIENCY
DUST CONTROL
with DUCLONE COLLECTORS

- Because each DUCLONE COLLECTOR is tailor-made for specific use . . . in proper balance—in shape, size of clone and vortex—in relation to air velocity.
- Because scientifically designed and built to eliminate all destructive eddy currents and resistance to centrifugal action.
- Because only DUCLONE is equipped with inlet control and adjustable vortex shield to give highest performance efficiency.
- Expertly engineered . . . simple and sturdy construction . . . assure long, continuous, heavy duty service.
- *A DUCON engineer will gladly confer with you on any dust problem.*

Write for descriptive, illustrated catalog DC49-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 28 if you write the maker

S-A WINCHES
*Save time and men*
AT LOWEST COST

S-A Motor Winch Style No. K5

Don't take high-pay men from their regular jobs to lift or move heavy loads. It saves time and money to do most lifting and pulling jobs with an S-A Winch.

One man—with a hand winch—can lift as much as a ton—up to 3,000 pounds with an S-A Motor Winch. *Cut operating costs this economical way!*

Write for Winch Bulletin 340 and consider possible savings.

S-A Hand Winch Style No. 30

STEPHEN S-A ADAMSON MFG. CO.

Tellevel Bin Level Controls • Car Loaders
SACO Speed Reducers Car Pullers • Winches
SealMaster Ball Bearings

231 Ridgeway Ave., Aurora, Illinois

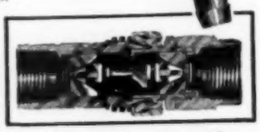
BREVITY—Identify by IEN - 29 if you write the maker

WHEN YOU . . .
Disconnect, You Stop the Flow in *Both* Ends

Wherever the flow of air, fluids, or gases must be interrupted, Wiggins *INST-O-MATIC* couplings are lowering costs. Uncouple a Wiggins. You've automatically stopped the flow in both ends. Connecting, or disconnecting, is as simple as switching on a light. Wiggins *INST-O-MATIC* couplings can increase efficiency in your plant today, and lower costs.

EQUIPMENT MANUFACTURERS

Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.



BASIC SIZES: ¼", ½", ¾"; also intermediate sizes where needed. Unconditionally guaranteed to be leak proof from 0 to maximum recommended pressure.

Wiggins

QUICK DISCONNECT
INST-O-MATIC COUPLINGS

For proof of performance, write for name of nearest representative. E. R. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 30 If you write the maker

# 5 ways to use LOVEJOY VARIABLE SPEED PULLEYS

**FOR QUICK PRODUCTION CHANGES**

- Speedability of different operators
- Variation in size of parts or stock
- Variation in temperature or humidity
- Variation in size or density of materials
- Changes in production schedules

**No Stops for Speed Changes.**

Easily installed with any equipment new or old. Fingertip control. Available from fractional to 8 H.P. duties.

SHIPPED FROM STOCK
Write for complete catalog today

**LOVEJOY FLEXIBLE COUPLING CO.**
5014 W. Lake Street Chicago 44, Ill.
Also mfrs. of Lovejoy Flexible Couplings and Lovejoy Universal Joints

BREVITY—Identify by IEN - 31 If you write the maker

# DESIGNED— for quiet, dependable operation

## SEALMASTER BALL BEARING UNITS

- ★ Pillow Blocks
- ★ Take-Up Units
- ★ Flange Units
- ★ Cartridge Units
- ★ Flange Cartridge Units

**Self-Aligning**—Exclusive design permits shaft misalignment in any direction, without distortion of seal.

**Permanent Seal**—Patented centrifugal seals exclude dirt and retain lubricant.

**Pre-Lubricated**—SealMasters are shipped with lubricant sealed in—ready to use.

**No Housing Wear**—Patented locking pin positions unit for relubrication and prevents rotation of outer race in housing.

*Write for Catalog 845*

BEARING DIVISION
**STEPHEN S-A ADAMSON MFG. CO.**
ELGIN, ILLINOIS • AURORA, ILLINOIS • LOS ANGELES, CALIF. • BELLEVILLE, ONT.

*Factory Representatives and Dealers in All Principal Cities*

BREVITY—Identify by IEN - 32 If you write the maker

# TAILORED TO KUPPENHEIMER'S FLOOR NEEDS!

## PABCO MASTIPAVE

AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"Pabco Mastipave floor covering is installed in our main trucking aisles and also in our men's and women's rest rooms," says Jesse Nirka, Factory Manager, B. Kuppenheimer & Co., Inc. – one of the nation's foremost clothing manufacturers.

"We are very well satisfied with the way these Pabco Mastipave floors are standing up under traffic. They look as well today as the day they were laid. We would not hesitate to recommend this type of flooring to anyone desiring a good wearing floor surface."

**TAKES THE POUNDING OF MILLIONS OF FEET**

Every building needs Pabco Mastipave! For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave – both regular and non-slip Grip-Tread types – costs little, looks good, wears even better! Grip-Tread Mastipave is sold in roll goods only – regular Mastipave is available in roll goods and tiles.

PABCO

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO PRODUCTS, Inc.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

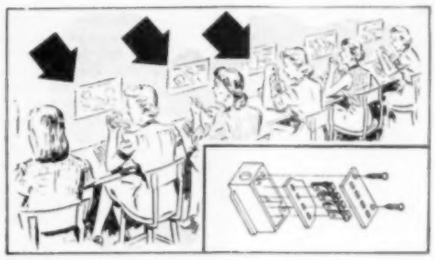
GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____ CITY _____
ADDRESS _____ STATE _____

BREVITY—Identify by IEN - 33 If you write the maker

## DRAFTING . . Engineering service makes isometric instruction drawings

Source: ISOMETRIC CO.
1819 Broadway, Room 1103, New York 23, N. Y.



**Isometric drawings** to show the individual pieces in an assembly in separated three-dimensional views are now available to order from the company. Such drawings require no technical knowledge to understand them. The individual pieces are lifelike in appearance and their relation to each other is immediately understandable.

**Booklet, 12 pages,** presents illustrations and text explaining the service and providing information on typical applications including preparation of manuals and instruction books as well as individual isometric drawings.

BREVITY—Identify by IEN - 34 If you write the maker

## GRINDING . . Abrasive wheels with vitrified bond for portable use

Source: CHICAGO WHEEL & MFG. CO.
1103 W. Monroe St., Chicago 7, Ill.

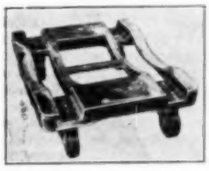
**Sizes range to 14 inches**

**Portable grinding** on billets, forgings and forging dies, annealed malleable castings, steel castings, stainless-steel welds are typical points of application for the company's new vitrified grinding wheel known as No. 79E Bond. Operating speed is recommended to 6,000 fpm. Characteristics are fast free cutting action, resistance to wear and breakdown. Tests indicate the possibility of production increase between 5 and 10 per cent per wheel as compared to company's previous wheels.

BREVITY—Identify by IEN - 35 If you write the maker

## TRUCK . . Swivel wheel dolly weighs 12 pounds, rates 500 pound load

Source: A. E. BRADLEY MFG. CO.
Box 151-A, Saugatuck, Conn.



**No. 55** is a new load-handling dolly with a 14¾ by 18-in. non-ferrous metal top mounted on four ball-bearing swivel casters equipped with 3-in. wheels. The top carries grooves to engage slats on crates. It is depressed in the center to handle cylindrical loads such as short or long rolls. Two units can be employed in the latter case. List price is $18.40.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

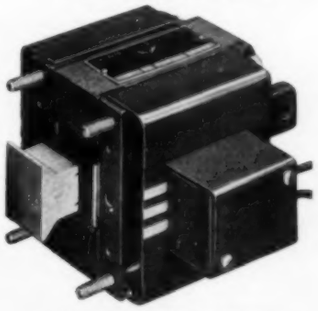
BREVITY—Identify by IEN - 36 If you write the maker

# TROMBETTA SOLENOID CORP.

MILWAUKEE WISCONSIN U.S.A.

**FOREMOST SOLENOID MANUFACTURERS IN THE WORLD**

**CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE.**



F-326 PULL TYPE SOLENOID
10 lbs. at 85%; 14 lbs. at 100% voltage and 1½" stroke.

THE F-300 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

BREVITY—Identify by IEN - 37 If you write the maker

# WHEREVER AND WHENEVER Heat is a problem LOOK TO CHROMALOX Electric HEAT

**WHY CHROMALOX OFFERS YOU THE BEST IN ELECTRIC HEAT!**

**EXPERIENCE**
32 years of manufacturing and application engineering know-how in almost every industry and process employing heat up to 1000°F.

**SERVICE**
Offices in 37 cities to serve you promptly by direct contact, plus numerous distributors stocking basic items for immediate delivery.

**SELECTION**
15,000 types, sizes and ratings of Chromalox Electric Heaters to fit your requirements, plus "tailored" heaters for unusual applications.

**ENGINEERING**
125 field application engineers to give you on-the-job engineering assistance for efficiently, economically and quickly solving your heating problems.

WRITE FOR CATALOG 50 WHICH GIVES FULL DETAILS
EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Unit Heaters Advertisement, Page 11

**CHROMALOX** 18-4

*ELECTRIC HEAT FOR MODERN INDUSTRY*

BREVITY—Identify by IEN - 38 If you write the maker

# Cut Press "Down Time" with R-B* Interchangeable Punches and Dies

**EASY TO REMOVE**
Insert tanged tool, release ball bearing retainer lock, and out comes the punch or die.

**EASY TO INSERT**
Just a push and a twist and the punch or die is securely locked and accurately aligned.

R-B standard punches and dies are stocked for immediate delivery. Punches and dies of special sizes, shapes and materials made promptly to your specifications.
*Richard Brothers

*Get the Whole Story in This 48-page Free Catalog* →

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION
Department 51 • 12615 Burt Road • Detroit 23, Mich.

*Also Produced in Allied's Four Plants . . .* HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES •

BREVITY—Identify by IEN - 39 If you write the maker

# Easy On — Easy Off AND EASY TO ALIGN

YOU CAN MOUNT a *"Magic-Grip"* sheave faster than any other sheave you can buy . . . and demount it just as fast. It runs true, will not slip or jam. And it comes off easily without hammering, forcing, or distortion.

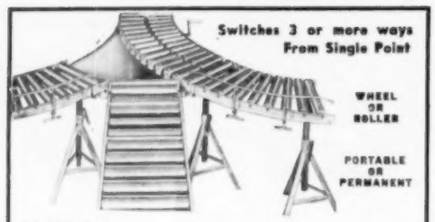
To mount, simply slide sheave on shaft and tighten three screws. No alignment problem. To demount, use screws to break the tapered bushing grip. Sheave slides right off. Best of all they cost no more than ordinary sheaves. Even if you don't change sheaves often, it still pays to buy *Magic-Grip* sheaves for every drive.

Get complete facts on how *Magic-Grip* sheaves can save you money by calling your Allis-Chalmers Authorized Dealer or Sales Office, or write for booklet 6051. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3238

*Magic-Grip is an Allis-Chalmers trademark.*

**ALLIS-CHALMERS**

BREVITY—Identify by IEN - 40 If you write the maker



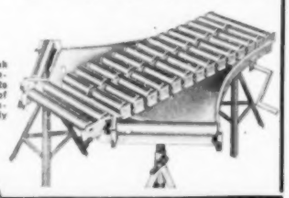

VERSATILE
**FLEX-A-SWITCH** WITH LONG-LEAD SCREW SETTING

A few turns of the crank sets Flex-A-Switch for selected line of converging or diverging travel in power or gravity lines.
Can be used with electrified switching arrangement, stop mechanisms and remote control.

POSITIVE LINE OF TRAVEL

Axles of Flex-A-Switch are divided and are consistric at all settings to assure a positive line of travel. Guards are unnecessary except for extremely fast travel.

WRITE FOR PARTICULARS



METZGAR

**METZGAR CO.**
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 41 If you write the maker

With a 5-Ton American MonoRail Crane and 3 men, 15 tons are unloaded and stored in only 30 minutes. An average of 27 tons per day from storage to processing. Call in your American MonoRail engineer — he'll gladly show you how automatic handling pays and saves.

**THE AMERICAN MONORAIL COMPANY**
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 42 If you write the maker

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

*in the Revised, Enlarged SIXTEENTH PRINTING of this*

## TOOL and DIE STEEL HANDBOOK

*By Palmer and Luerssen*

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

PLUS 80-PAGE ALPHABETICAL SELECTOR SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

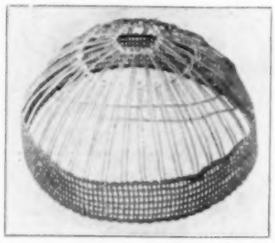
**OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW**

THE CARPENTER STEEL CO. • READING, PA. • DEPT. 8X-2
Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.
NAME _____ TITLE _____
FIRM NAME _____
MAILING ADDRESS _____
CITY _____ STATE _____
(Please print)

BREVITY—Identify by IEN - 43 If you write the maker

**HEATING . . Insulated element wire is woven to follow surface contour**

Source: ELECTROWEAVE MFG. CO.
30 Rockefeller Plaza, Room 4417, New York 20, N. Y.



**Resistance wire** with glass or silicone insulation is woven with glass or nylon cord to form a heating element that will carry 15 watts per sq. ft. to 15 watts per square inch. The element can be woven to form a band or belt measuring ½ to 12 in. in width by any length, it is available in special shapes such as the hemisphere shown in the illustration. Lead connections can be brought out as required for single-unit or sectional operation and control.

**The woven unit** provides heat in the infra-red range for applications such as warming, anti-icing, de-icing, processing. A sample piece is available on request or the company will fabricate a sample to specification in its regular production.

BREVITY—Identify by IEN - 44 If you write the maker

**WELDING . . Tungsten electrode for company's gas shielded arc gun**

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.

**Touch starting is practical**

**Thor-Tung**, thoriated tungsten, which has been employed in construction of electronic tubes, is now available as non-consumable electrodes in the company's inert-gas-shielded arc-welding equipment. Characteristics are comparatively cool electrode operation, ability to carry high current for given electrode diameter, arc stability as well as negligible consumption in the arc. The electrode can be pointed for operation at very low current on straight polarity as in welding aluminum and its alloys.

BREVITY—Identify by IEN - 45 If you write the maker

**RELAY . . Miniature dc. unit is hermetically sealed, 1 by 1¾ in.**

Source: SIGMA INSTRUMENTS INC.
73 Ceylon St., Boston 21, Mass.

**Type 22RJ** is a new sealed relay for use where space is limited and where the relay is subject to mechanical shock and vibration. Its double-pole double-throw contacts rate 2 amperes. Sensitivity is 50 mw. or better. Weight is 3½ ounces. Coil rating is to 12,000 ohms, 1 watt maximum dissipation. Application can be made in a range of ambient temperature between minus 60 and plus 100 deg. C. Life is for 500,000 operations at 2 amp. on 28-volt dc.

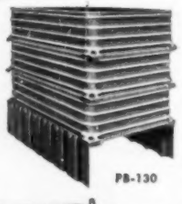
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 68*

BREVITY—Identify by IEN - 46 If you write the maker

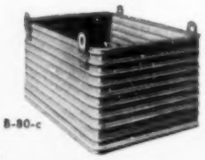
**HEADQUARTERS for materials handling equipment**

The success of modern production methods depends upon the efficiency with which materials and products in various stages of fabrication can be handled.

Truscon's Pressed Steel Division—nationally known for the quality of its products and the dependability of its service—is fully equipped and prepared to handle your material handling equipment requirements. The Pressed Steel Division's central location, moreover, assures efficient service for all your needs.

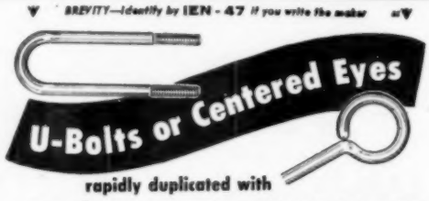


Descriptive catalog on TRUSCON STEEL BOXES & SKIDS free on request!




**TRUSCON Steel Company**
PRESSED STEEL DIVISION • 6100 Truscon Ave., Cleveland 4, O.
*Subsidiary of Republic Steel Corporation*

BREVITY—Identify by IEN - 47 If you write the maker




rapidly duplicated with

**di-acro HYDRA-POWER BENDER**

At last — a PRODUCTION BENDER that "BENDS THEM ALL" —tubing—angle—channel—extrusions—moulding — strip stock — bus bars—and of course, all types of solid materials. U-Bolts and Eye-Bolts are just two examples of the shapes that can be rapidly produced in one operation with this hydraulic power bender.

The DI-ACRO HYDRA-POWER BENDER can be easily set up in your own plant for a great variety of forming operations, or it can be delivered completely tooled for speedy production of a specialized part. Investigate this universal machine before you buy any "single purpose" bender.

*Send for*
**"DIE-LESS DUPLICATING" CATALOG**
giving full information on all DI-ACRO Benders, Brakes, Shears, Rod Parters, Notchers, Punches—also our offer of free DI-ACRO Engineering Service.

*DI-ACRO is pronounced "DIE-ACK-RO"*

**O'NEIL-IRWIN MFG. CO.**
318 8th Avenue, Lake City, Minnesota

BREVITY—Identify by IEN - 48 If you write the maker

*for...*
any joint
any pressure
any temperature

'Bestolife Lead Seal Pipe Joint Compound seals threaded and flanged pipe connections for air, water, steam, gas, oil, ammonia, alkalis, acids and chemicals. Unaffected by vibration, contraction or expansion. Will not gall or seize. Allows easy separation of parts. Backed by twenty years of compound experience. Satisfaction unconditionally guaranteed.

**See Your Supply Dealer or Write for Literature and Prices**

**I. H. GRANCELL**
1601 E. NADEAU ST., LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 49 If you write the maker

**A Better STRAINER**

- *BODY*—is cadmium-plated for protection against corrosion.
- *SCREEN*—High-grade woven monel wire basket.
- *SCREENCAP*—Easily removed. Machined face and spark-plug-type gasket provide tight joint. Cap and screen come out together. Screen automatically aligns when replaced.
- *SIX SIZES*, ½" to 2", for pressures up to 600 lbs. Reasonably priced.

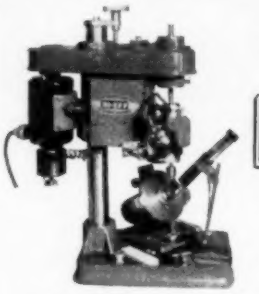
- **Many Thousands in Service**
- **Sold by nearly 150 Mill Supply Houses**

*See Your Supply House or Send for Bulletin S-201*

**YARNALL-WARING COMPANY**
122 Mermaid Ave., Philadelphia 18, Pa.

**YARWAY STRAINERS**

▼ BREVITY—Identify by IEN - 50 if you write the maker 51▼



# Taylor HI-EFF

## PRECISION DRILLING MACHINES

### Always Look For The FACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 761.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

*Dynamometers • Static Balancers • Precision Drilling Machines*

**TAYLOR DYNAMOMETER & MACHINE CO.**
528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

▼ BREVITY—Identify by IEN - 51 if you write the maker 51▼

## NOW—you can cut with *Full* Hydraulic Control

No binding "jack knife" action here! The new W. F. Wells saw is a *sensible* approach to accurate, low-cost cutting—perfected by the pioneers in band saw manufacturing. Unit feeds down smoothly, evenly on the job. BOTH speed of descent and pressure on blade can be selected and hydraulically controlled.

Unlike other metal cutting saws that are supported on their blades, the W. F. Wells unit carries and supports its blade. Result: trouble-free operation, more economical performance (users report several times longer blade wear).

Model M (pictured) has 10" clearance under blade, vise swiveling 45° in either direction, and numerous other outstanding features. Coolant system for wet cutting and other accessories available as described in FREE catalog.

**WRITE TODAY FOR COMPLETE INFORMATION**

**W. F. WELLS & SONS**
Three Rivers, Michigan

▼ BREVITY—Identify by IEN - 52 if you write the maker 51▼

## NEW IMPREGNATED FELT GASKETING MATERIAL

# PREVENTS CORROSION AND ELECTROLYSIS

## SEALS AGAINST DUST, WIND & WATER

**CHROME LOCK** consists of a high-grade felt, impregnated with a specially formulated blend of permanently thermoplastic resins, plasticicers, inert pigments and chromates. Prevents corrosion on original installations — stops corrosion when applied to rusty joints. Chrome Lock also inhibits *electrolytic action* between dissimilar metals.

**CHROME LOCK** has outstanding anti-aging qualities and will not deteriorate. Tests prove Chrome Lock far outlasts rubber. Chrome Lock is the ideal seal wherever anti-corrosion, anti-electrolysis and anti-aging properties are required! Read these added features:

- ★ **EASY TO APPLY:** Pressure-sensitive adhesive back.
- ★ **ANTI-WICKING:** Non-soluble in water or saline solutions. Prevents seepage under normal pressure applications.
- ★ **LIGHTER FLANGING MATERIALS:** Low pressure compressibility reduces required bolt torque pressures.
- ★ **MANY TYPES:** (Type S) Standard Material. (Type N) Flame Resistant. Conforms to BuShips Spec. 33F8. (Type OR) Oil Resistant. Used whenever S.A.E. 10-60 oils are present.
- ★ **MANY SIZES:** Thicknesses of 1/64", 1/32", 1/16", 1/8" and 1/4". Widths from 1/4" to 66".
- ★ **CUT GASKETS:** Made to your specifications.
- ★ **NATIONWIDE SERVICE:** Sales engineers in all principal cities.

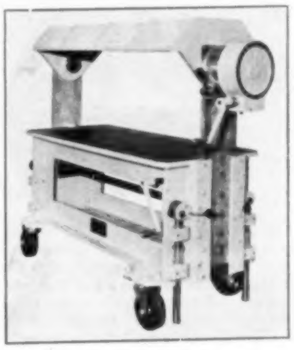
Write on your company letterhead for new, 6 page Engineering Folder No. SP-1051

Manufactured by Products Research Company
**SPRING PACKING CORPORATION**
332 S. MICHIGAN AVE. • CHICAGO 4, ILLINOIS

▼ BREVITY—Identify by IEN - 53 if you write the maker 51▼

## HANDLING . . Die tryout machine for assembly, fitting and testing

Source: MORLEY MACHINERY CORP.
1237-41 University Ave., Rochester 7, N. Y.



**Press tools** weighing to 1 ton can be positioned on the table of this new machine to assist in handling operations in connection with inspection, separating and assembling, fitting and test prior to application in a press. The machine will take tools to 43 in. in length by 24 in. in width. Its upper platen is moved by turning a crank through 16½ in. from 9 in. above the table, the minimum "down" dimension.

**The upper platen** is trunnion mounted on anti-friction bearings so it can be rotated to turn a punch assembly for inspection of its normally bottom surfaces. It is turned by operating a handcrank. The rotating movement is through 360 deg. and is self-locking in any position. A locating pin can be engaged at any of five predetermined locations.

**Mounting** for the assembled machine is on casters for portable use and to permit wheeling a die under a radial drill. It then can be raised on cam-operated legs for firm support. Die flipper is the designation.

▼ BREVITY—Identify by IEN - 54 if you write the maker 51▼

## LOCOMOTIVE . . Battery powered for mine haulage rates 400 lb. pull

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

**DC. motor** is geared to each of the two axles in this new Trammer locomotive. It is operated by a master controller governing both the power and the braking actions. Operating shafts are mounted on anti-friction bearings. The motor is totally enclosed design. Power is supplied by any standard make of storage battery. The operator rides in seated position in a compartment that can be folded up to permit loading into a small mine elevator.

**Track gage** can be specified between 18 and 24 inches. Overall clearance dimensions are about 72 in. in length by 36 in. in width by 45 in. in height, the latter with a high-type battery. Weight is 3,000 pounds. Maximum drawbar pull on a level track is 750 pounds. Speed is to 7 mph. free and 3 mph. with the rated 400-lb. drawbar pull.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88*

▼ BREVITY—Identify by IEN - 55 if you write the maker 51▼

▼ BREVITY—Identify by IEN - 56 if you write the maker 51▼

# Dependable . . . "ON-OFF" Controllers For Industry

The kind of control instrument which industry calls "on-off" or 2-position is not only the oldest form of automatic regulator, but is one which many manufacturers still use, instead of more advanced types, for simple requirements. Usually, the instrument merely closes the valve when temperature reaches the control point, and opens the valve again when temperature falls below point. The question of whether such on-off action is best for the given case can of course be settled by using the instrument with the best, most useful features. Here are some which L&N On-Off Controllers offer:

1. Instruments may be Recording Controllers with either strip-chart or round-chart, or Controllers with no charts at all.

2. Instruments can operate at high speed; are not affected by vibration or distance from process.

3. Controls are outstandingly dependable because they "balance" temperature against a standard.

4. Low maintenance assured by machine-like design and construction.

5. More than 1000 standard ranges. Specials are available.

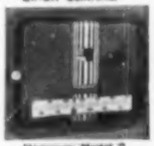
Tell us your problem and we will send further information. Write either to our nearest office or to 4905 Stenton Avenue, Philadelphia 44, Pa.

**LEEDS & NORTHRUP CO.**

Jrl Ad ND4-33(3b)

Speedomax (or Micromax) Strip-Chart Controller

Speedomax Round-Chart On-Off Controller



Micromax Model C

Electromax

▼ BREVITY—Identify by IEN - 57 if you write the maker 51▼

# A NEW BOOK TO HELP YOU CUT COSTS

Our new booklet on Rex Stock Sprockets gives you all the details on how these sprockets will add life to your chain drives. Cast in either highest quality gray iron or long wearing Rex Temperim, there is a correct Rex Sprocket for every chain in our complete line.

The booklet includes complete specifications, prices and ordering information. Send for it today, using coupon below.

**REX CHAINS and SPROCKETS**

CHAIN BELT COMPANY 80-111
1675 W. Bruce Street, Milwaukee 4, Wis.
Gentlemen:
Please send me a copy of Bulletin No. 49-30.

Name................................................
Company..............................Dept...........
Address.............................................
City.................................State..........

▼ BREVITY—Identify by IEN - 58 if you write the maker 51▼

# the *IDEAL OPEN FLOOR* for every industry

• *Electroforged* into one exceptionally strong piece • *non-slip twisted bar* for safe footing • maximum open area • self-cleaning, with no corners to clog • easily installed • easily maintained • *adaptable* to many uses, indoors and out, for every industry.

**BLAW-KNOX Electroforged STEEL GRATING**

Open Flooring • Sidewalk Doors • Bridge Surfacing • Catwalks • Sidewalks • Subway Grating • Treads
Many other uses

**Send for BULLETIN 2296 TODAY!**

BLAW-KNOX DIVISION of Blaw-Knox Company
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.
Offices in Principal Cities

**BLAW-KNOX ELECTROFORGED STEEL GRATING**

BREVITY—Identify by IEN - 59 if you write the maker

THOMAS TRUCK & CASTER CO.

130 Mississippi River
KEOKUK, IOWA

BREVITY—Identify by IEN - 60 if you write the maker

NOW

New air-operated clamps with toggle-bar force

*from Feather-touch to* **OVER A TON**

. . . another example of design leadership to provide simultaneous multiple clamping and solve your SPEED-PRODUCTION problems.

*Consult us direct or our representative engineer near you*

Buffalo, N. Y., J. H. England
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Columbus, Ohio, Arthur Gangloff
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Houston, Texas, L. H. Creasy
Indianapolis, Indiana, E. M. Lewis
Kansas City, Kansas, L. N. Wood
Milwaukee 9, Wisc., K. W. Stoffregen
Minneapolis 4, Minn., Midwest Mach Tool Supply
New York 17, N. Y., V. A. Chern
Oakland, Calif., Bues Prod. Equip. Co.
Philadelphia, Pa., Jackson-Walter Co.
Seattle, Washington, Norwes Company
St. Louis, Missouri, Moehlenpah Engr. Inc.
Poland, Ohio, P. L. Duer

Send for new folder giving further information

KNU-VISE PRODUCTS LAPEER MFG. CO.
3056 DAVISON ROAD • LAPEER, MICHIGAN

Western Division
422 Magnolia St.
Glendale, Calif.

Canadian Stocking Dist.
Higginson Engr. Sales
P.O. Box 23, Hamilton, Ontario

BREVITY—Identify by IEN - 61 if you write the maker

HOOKS, TONGS GRIPS and SLINGS

SPEED UP HANDLING *SAFELY!*

Downs Grabs are designed to do a multitude of lifting jobs faster with a greater margin of safety. Handling steel coils, heavy bags, plate and structural steel, bar stock, drums, etc., is always easier with Downs Grabs. Learn about savings . . . Write for free Bulletin No. 2008.

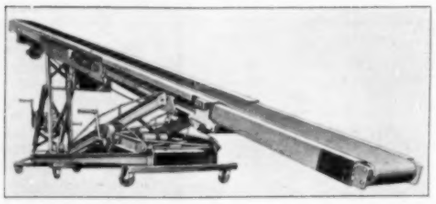
DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE
LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks
Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

BREVITY—Identify by IEN - 62 if you write the maker

## CONVEYING . . Extendable belt unit, wheel mounted, length to 55½ feet

Source: STEWART-GLAPAT CORP.
50 Stewart Ave., Zanesville, Ohio



**Adjustoveyor** trade names new wheel-mounted motor-driven belt conveyor that employs a telescoping frame and belt-takeup idler to permit longitudinal extension and retraction of the load-carrying surface. At the same time the supporting base is adjustable to position the belt horizontally from 3 to 8 ft. above the floor or to set it for upward or downward incline to 20 deg. with horizontal. Drive is by a 1½-hp. motor.

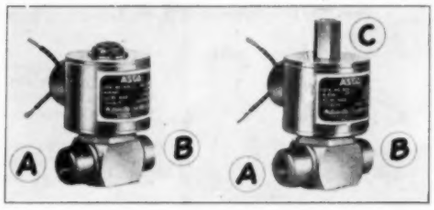
**Two designs** employ a steel slide surface for the belt and load carrying rollers. The former will carry a total distributed load of 850 lb. or a unit spot load of 150 pounds. Belt width is 14 in. but other widths can be specified.

**Smallest assembly** in the line measures 8 ft. in retracted length and extends to 14½ feet. Largest adjusts between 32 and 55½ feet. The supporting base measures 4 by 18 ft. and is equipped with two hand-operated elevating mechanisms, one at each end, self-locking to hold at any elevation.

BREVITY—Identify by IEN - 63 if you write the maker

## VALVE . . Solenoid operated two and three way, ⅛ and ¼ inch

Source: AUTOMATIC SWITCH CO.
389-93 Lakeside Ave., Orange, N. J.

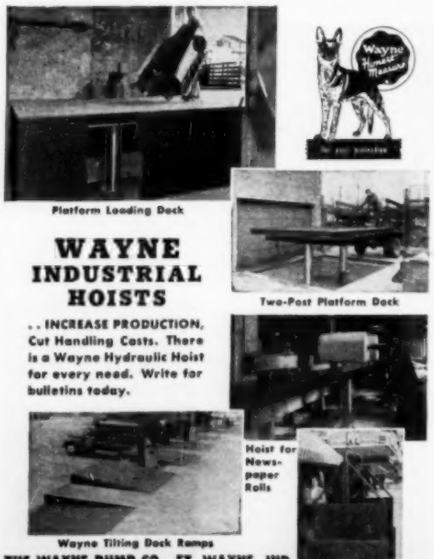



**Ports** are at A and B in the two-way design, A, B and C in the three-way unit in this new solenoid-operated valve. Midget is the designation. Both are designed to control flow of liquids and gases at temperatures to 212 deg. F. as in oil burners, dispensers, measuring and testing apparatus, power cylinders, diaphragms, similar equipment.

**The two-way design** is made in ⅛ and ¼-in. port sizes normally closed and in ⅛ in. normally open. Pressure range is to 300 lb. for ac. operation, 250 lb. for dc. The three-way valve is made in ⅛-in. size only for pressures to 125 lb. on ac. and 50 lb. on dc. The bodies are machined from brass or stainless-steel bar stock. Seats are integral with the bodies. Discs are flat resilient synthetic composition. Electrical connections are brought in through a ½-in. conduit.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 64 if you write the maker




WAYNE INDUSTRIAL HOISTS

. . INCREASE PRODUCTION, Cut Handling Costs. There is a Wayne Hydraulic Hoist for every need. Write for bulletins today.

THE WAYNE PUMP CO., FT. WAYNE, IND.
321 TECUMSEH STREET

NATIONWIDE SERVICE

BREVITY—Identify by IEN - 65 if you write the maker

Ledeen CYLINDERS IMPROVE THE JOB

CYLINDERS PROVIDE AUTOMATIC OPERATION OF FLUE DAMPERS

Thirteen 2" diam. x 6" stroke Ledeen Heavy Duty cylinders individually operate 13 flue dampers, connected to bag filters in 6 smoke filter systems. 100 P.S.I. plant air operates cylinders. System is entirely automatic, controlled by a central timer.

There are Ledeen *medium duty, heavy duty* and *super duty* cylinders for air, oil or water operation ready to help you, wherever you have to . . . push or pull • lift or lower • press or squeeze • tilt or turn • open or close.

Standard Ledeen cylinders and mounting attachments are available from distributors' stock in major cities. Special cylinders on order.

LEDEEN CYLINDERS ARE GOOD CYLINDERS

WRITE FOR NEW BULLETIN 500

Ledeen MANUFACTURING CO.
1602 SAN PEDRO STREET • LOS ANGELES 15, CALIF.

BREVITY—Identify by IEN - 66 if you write the maker

SYNTHETIC SAPPHIRE *for*

### *Resistance to Wear*

Outlasting hardened steel and cemented carbides up to 5,000 times.

### *Resistance to Friction*

Affording very low friction characteristics due to hardness and surface continuity.

### *Resistance to Heat Distortion*

Retention of form at temperatures up to 1,000° C.

### *Retention of Insulating Properties*

Excellent dielectric properties over a wide range of temperatures.

Synthetic Sapphire can be polished by flame or diamond polishing; it can be formed and bent by flame. Polished sapphire surfaces keep free of dirt, lint, and in many anti-friction applications, need not be lubricated.

Call or write the LINDE office nearest you for copies of the "Synthetic Crystals Properties Sheet" and the "Synthetic Crystal Stock List".

LINDE AIR PRODUCTS
Division of Union Carbide and Carbon Corporation
30 East 42nd St., New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

BREVITY—Identify by IEN - 67 if you write the maker

RAMSCO BALL BEARING SWIVEL FITTINGS THAT ARE REALLY FREE TURNING

FOR LIQUIDS, GASES, PROPANE, HOT ASPHALT, STEAM, ACIDS AND OTHER CHEMICALS

For oil refineries, chemical plants, processing, pipelines, drilling, truck and tank car loading racks. Individual joints or multi-joint flexible steel hose, RAMSCO's patented method of packing offers proven dependability for continuous or occasional rotation service.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ⅛" to 14" low pressure; ⅛" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750° F., asbestos or Teflon packed. Low pressure fittings to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

*Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style below, threaded, flanged or weld ends.*

RASMUSSEN MFG. CO.
RAMSCO
12303 INDUSTRIAL AVE.
HOLLYDALE, CALIFORNIA

BREVITY—Identify by IEN - 68 if you write the maker


SAVINGS AS HIGH AS 50% MADE WITH THIS P-K SCREW

*It's the "one operation" fastener*

SIMPLE
Hammered or Pressed into Plain Holes

SPEEDY
No Tapping
No Mold-Complicating Inserts

STRONG
Tamper-Proof Permanent Fastening

P-K TYPE "U"
Hardened METALLIC DRIVE SCREW
For permanent fastenings in castings, heavy sheet metal, plastics. One of many types. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K®, . . . IT'S O.K. — THE *ORIGINAL*
PARKER-KALON® SELF-TAPPING SCREWS
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

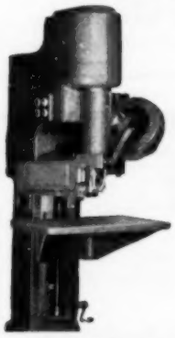

BREVITY—Identify by IEN - 69 if you write the maker


Have You An Assembly Problem?

LET OUR SPECIALISTS HELP YOU

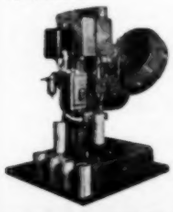
**Are you still using slow uphill hand methods that keep your assembly department in low gear and labor costs in high? Discard them and get on to the rapid straight-away of speedy, inexpensive production offered by D.P.S. power-driven machines.**

DETROIT POWER SCREWDRIVERS
Drive screws as fast as one a second—all types of screws—no marring of heads or stripping threads—all screws driven to uniform tension—Hopper-fed—SCREWS ALWAYS IN SIGHT OF OPERATOR—3 models, one to fit your requirements.



DETROIT POWER NUT DRIVER
A revolutionary new machine that drives nuts with amazing speed, either semi-automatically, or it can be adapted to full automatic operation entirely eliminating the manual handling of nuts. Capacity: nuts, 5/16" min. to 11/16" max. across flats.

THE HOPPER UNIT
Motorized—Highly Adaptable—A selective feeding device whereby production parts are selected, oriented and fed in a given position for primary and secondary operations.



SPECIAL ASSEMBLING MACHINES
For light assembly operations using Hopper Units to feed component parts.

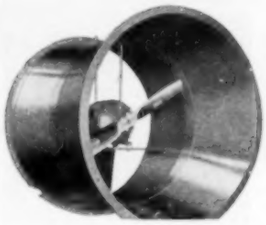
*Write for Catalog*

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.


BREVITY—Identify by IEN - 71 if you write the maker

## VENTILATING . . Propeller type fan is reversible, rates 20,000 cfm. free

**Source: HARTZELL PROPELLER FAN CO.**
**1023-27 Roosevelt Road, Piqua, Ohio**



New assembly of motor-driven 24-in. propeller-type fan at the center of a short double-V section of duct provides for air movement in forward or reverse direction as set by the operator at a motor-reversing switch. It is not necessary to move the position of the propeller blades as they are designed for equal performance in forward or reverse air movement. A typical application is in kiln operation to reverse flow of drying air at intervals for uniform action.

BREVITY—Identify by IEN - 72 if you write the maker

## MARKING . . Black ink in bottle fitted with a felt tip

**Source: B & L MFG. CO.**
**3510-14 N. Halsted St., Chicago 13, Ill.**

**Mar-Kit** is a new "dry-writing" black ink that is packaged in a 1-oz. bottle equipped with a screw cap carrying a felt marking tip. A small cap protects the tip when the unit is not being used. Application can be made on wood, paper, steel, fabric. The ink will not become sticky. It dries almost at once on a marked surface. The complete unit with the ink lists at 89 cents. A replacement bottle of ink is 35 cents. The cap and tip assembly is 60 cents.

BREVITY—Identify by IEN - 73 if you write the maker

## HANDLING . . Skid mounted box with hopper door, sizes as specified

**Source: POWELL PRESSED STEEL CO.**
**50 Industrial Blvd., Hubbard, Ohio**

**Hopper Box** designates new welded pressed-steel parts-handling box for transportation on a fork truck and for stacking at a machine or in storage. The box contains a hopper door on one side for access to the parts as shown in the illustration. The design can be supplied with a gravity-feed or flat bottom and with two or four-way entry for truck forks. Sizes and load rating are subject to specification to meet requirements.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 74 if you write the maker


Simplify Your Hose Buying with Hewitt-Robins Servall®

If your plant has many intermittent, light-duty uses for hose, Hewitt-Robins new Servall all-service hose is the efficient, economical answer!

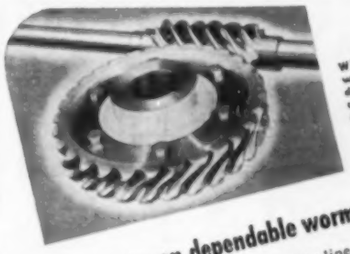
**SPECIFICALLY,** Servall is recommended for: All types of small air tools; for air cleaning and general air service; hot or cold water service within recommended working pressures; low-pressure spraying and fire-fighting; intermittent gasoline and oil service where the hose is not continuously filled; weak inorganic acids and alkalies and water contaminants; grease, paint (not lacquer) and insecticide spraying.

**HERE IS MANY-HOSES-IN-ONE;** dependable wherever and whenever a special heavy-duty hose is not required. Buy Servall. Buy it by the reel, use it as you need it. Think of the money you save!

**BULLETIN 137** gives complete data. Call your Hewitt Rubber distributor (see "Rubber Products" in classified 'phone book) or write Hewitt Rubber Division, 240 Kensington Ave., Buffalo 5, N. Y.

HEWITT-ROBINS
SERVALL HOSE


BREVITY—Identify by IEN - 75 if you write the maker

Whether you want standard drives or special units, Cleveland can serve you.

Prompt service on dependable worm gearing

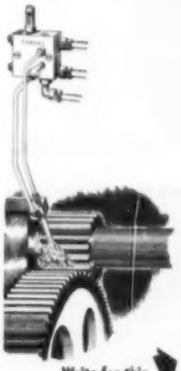
CLEVELAND offers a complete line of worm-gear sets and speed reducers, including the popular fan-cooled Speed-aire, to meet the needs of any machinery or equipment builder or user. Representatives in all major industrial centers are at your service. Write for the latest Cleveland catalog, indicating your requirements. Your inquiry will receive prompt attention. The Cleveland Worm & Gear Company, 3258 East 80th Street, Cleveland 4, Ohio.

CLEVELAND Worm Gear Drives


BREVITY—Identify by IEN - 76 if you write the maker


New Farval Spray Valve

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING



Write for this FREE bulletin

BY an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—onto any desired area, in any amount, at any interval.

The new Farval Spray Valve can be added to a regular Farval Dualine Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

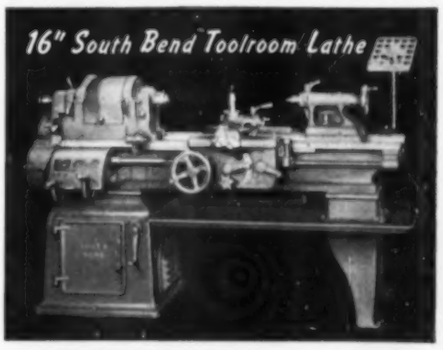
Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipment, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 3258 East 80th Street, Cleveland 4, Ohio.

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION


BREVITY—Identify by IEN - 77 if you write the maker

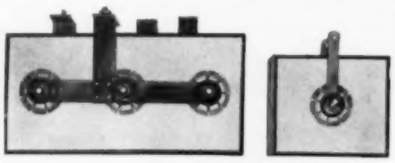

FIRST CHOICE




Versatile . . . highly accurate . . . easy to operate, this quality-built toolroom lathe is first choice among toolmakers because it makes their most difficult, close-tolerance jobs easier. 16" x 6' Toolroom Lathe *(illustrated)* with toolroom attachments; drum switch; and 220 V., 3 ph., 60 cy. motor—f.o.b. factory — $2538. Time Payments — $636 down, $168 monthly for 12 months.

SOUTH BEND LATHE
SOUTH BEND 22, IND. • Building Better Tools Since 1906

BREVITY—Identify by IEN - 78 If you write the maker



SYNTRON

# SELENIUM RECTIFIERS

½" sq. to 12" x 16" cells—in stacks, or single cells for customer assembly.

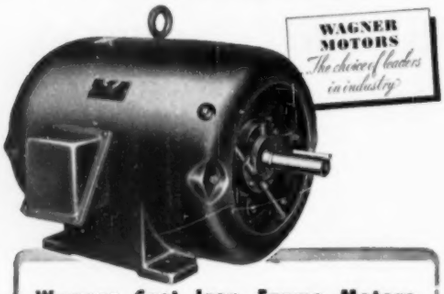
Made by a new process to a uniform, high quality, for continuous, heavy-duty service.

*Write for literature.*

**SYNTRON CO.**

410 Lexington, Homer City, Pa.

BREVITY—Identify by IEN - 79 If you write the maker




## Wagner Cast Iron Frame Motors

**resist the damaging action of acids, fumes, moisture and other destructive elements**

Wagner cast iron frame motors are built to provide corrosion-resistance. They feature well-impregnated, special varnish treated windings protected by totally-enclosed fan-cooled construction . . . a cast iron, gasket sealed conduit box . . . and drain plugs in the endplates for easy removal of any condensation from inside the motor.

These motors are available in ratings from 5 to 250 horsepower, in both standard (type EP) and explosion-proof (type JP) designs. Write for Complete Information.

Wagner Electric Corporation

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 80 If you write the maker

# BIN-LEVEL CONTROLS

**2 BIN-DICATORS Often Replace 1 Man**

**BIN-FLO**
Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

*Mail this Coupon*

**THE BIN-DICATOR CO.,** 13946 Kercheval, Detroit 15, Mich.

Please send new 20-page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

Name_____

Address_____

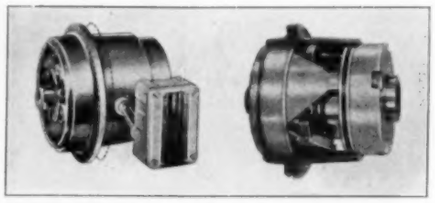
City_____ Zone____ State_____

N-1

BREVITY—Identify by IEN - 81 If you write the maker

## DRIVE . . Overload safety cutout opens motor circuit at preset torque

**Source: ANCHOR STEEL & CONVEYOR CO.**
**6904-8 Kingsley Ave., Dearborn, Mich.**



**New assembly** employing a flexible coupling for in-line connection to a motor or drive shaft has been added to the company's line of sprockets, belt and sheave-driven safety cutouts previously described IEN-2308-50. Two sizes cover working ranges from 10 to 2,000 in. lb. of torque. Greatest diameter is 7 and 8½ inches. Overall length is 6¾ to 12 inches. Bore on the recommended input or coupling side is ¾ to 2½ in. and on the output or cutout side is 1¼ and 1¾ inches. Maximum recommended speed is 2,400 rpm. Drive can be in either direction.

**The driving element** rotates an integral multiple-edge barrel cam which rides against a sleeve to rotate the output side. The cam action tends to move the sleeve axially, as well as to rotate it, against the action of an axial retaining spring. This spring is interchangeable in the housing for the available ranges of torque rating.

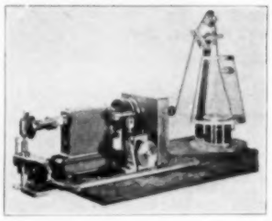
**Overload** does move the sleeve axially so its flange contacts and actuates a Micro switch mounted beside the cutout as shown in the illustration. The switch opens the driving power circuit and rotation stops. Removal of the overload permits the spring to return the sleeve to normal position and releases the switch so the circuit can be reclosed to resume the drive.

**Catalog 50A,** 12 pages, presents illustrated description covering all of the designs in the line, includes specifications, dimension and selection data for each type.

BREVITY—Identify by IEN - 82 If you write the maker

## WINDING . . Bench mounting machine winds coils in small motor armatures

**Source: GEO. STEVENS MFG. CO.**
**6020-24 N. Rogers Ave., Chicago 30, Ill.**



**Model 36** is a new machine in the company's line to take small armatures and wind coils into the slots. The wire feeds from a spool through the machine's hollow spindle to a revolving arm that rotates beside the armature at the left-hand side as the machine is shown set up in the illustration.

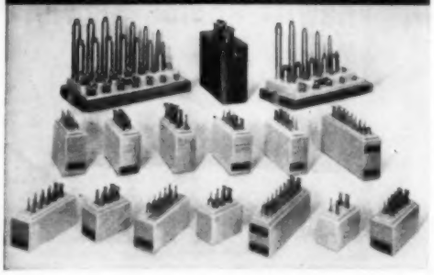
**Operation** is at 1,000 turns per min. to wind into straight or skewed slots. Tension is adjustable. The armature is indexed automatically. The machine and its table occupy 20 by 30 in. of floor space. Simple setup adjusts the machine for given number of turns in the coil to be wound.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 83 If you write the maker

*You should have one of these*

# JIG BORING SETS



Having boring tools in sets for jig boring makes for increased efficiency—always handy. Saves your time.

Bokum boring tools are put up in boxes to meet your specific needs—for precision boring of diameters from 1/16" up—economical, efficient, fast.

*Send for folder N-1139-6 giving prices and detailed information of all assortments—super high speed steel boring tools.*

*Ask for N398 carbide tipped tools*
*N948 solid carbide tools*

Bokum continues to serve you after the sale by providing a Resharpening Fixture to keep your tools in factory-new condition. Send for folder NAB-412.

**BOKUM TOOL CO.**
14775 WILDEMERE AVE. · DETROIT 21, MICH.

SINGLE POINT BORING TOOLS—INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS

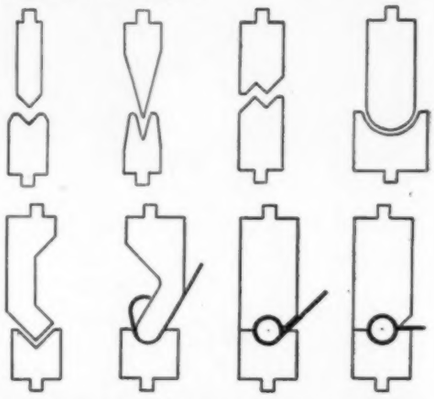
BREVITY—Identify by IEN - 84 If you write the maker

# PRESS BRAKE FORMING DIES

*PROMPT DELIVERY*

**Any Metal—any gage—to fit any make of machine**

*Here are a few examples:*



**RAFTER MACHINE COMPANY, INC.**
SINCE 1917

**249 Stephens Street** **Belleville 9, N. J.**

COLD ROLL FORMING MACHINES AND GANG SLITTERS

BREVITY—Identify by IEN - 85 If you write the maker

Pick a winner every time—insist on genuine TOLEDO Pipe Tools to thread, cut and ream pipe at *top-speed* . . . with *less effort* . . . and *lower cost.* Your choice—29 quality-built TOLEDO tools for all pipe sizes, ⅛" to 12", and ¼" to 1" bolts . . . also high-production power pipe machines, up to 2" and 4" capacity . . . and portable power drives. Time-proven dependability. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

RELY ON THE LEADER **TOLEDO**

POWER DRIVES...PIPE TOOLS...POWER PIPE MACHINES

BREVITY—Identify by IEN - 86 If you write the maker

*Air-Speed* Trade Mark ®

**SAW AND FILE**

Fully Portable . . Light Weight . . Adjustable Stroke . . Finger Tip Control . . Explosion Proof . . Government Approved.

## STILL SAWS OFF COSTS!

Light, easy to handle. Cuts almost all metals, with power to spare. Irons out cramped quarters, tough work positions. Instant attachment to air line. A job tested, work proven, cost cutting, air-powered hand tool. Price complete $49.50 F.O.B. Los Angeles.

**PLUS AIR-SPEED AIR DRILLS**
Straight and pistol grip types.
Noted for power, durability, economy.

Price from $52.50 F.O.B. Los Angeles
*Literature Available.*

**AIR-SPEED TOOL COMPANY**
1500 W. Slauson Avenue
Los Angeles 47, Calif. Dept. 1-51

BREVITY—Identify by IEN - 87 If you write the maker

**Quadriga SPECIAL STAMPINGS AND WASHERS**

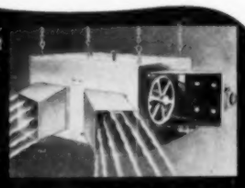
....give you

Washers and stampings made to your order. Press capacities up to 150 tons. A draw depth of 4 in. Large or small quantities FAST. Flat—tension—spring—formed—drawn—cupped—finishing washers of precision in any material you want them. Stampings in any design or metal. Send for prompt estimate. Complete technical catalog with valuable washer data free. WRITE TODAY.

**THE QUADRIGA MANUFACTURING CO.**
Established 1894
215A W. Grand Avenue, Chicago 10, Illinois

BREVITY—Identify by IEN - 88 If you write the maker

HERE'S YOUR ANSWER TO LARGE AREA **SPACE HEATING!**



**CHROMALOX** *Blower Type* **UNIT HEATERS**

**FOR HEAVY-DUTY HEATING IN FACTORIES, WAREHOUSES, OFFICES**

Ceiling mounted CHROMALOX Electric Blower-Type Heaters are your quick, easy answer to space heating! Twin centrifugal fans, driven by a 3-phase motor, distribute warmth evenly over large areas. Air ducts can be used to convey heated air to desired locations. Automatic thermal cutout assures protection against overheating. 51,180 to 136,480 BTU output per hour.

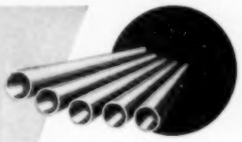
HAVE A HEATING PROBLEM OF ANY KIND?

Then write for Catalog 50. It's loaded with information on many of the 15,000 types, sizes and ratings of Chromalox Heating Units and Equipment.

EDWIN L. WIEGAND CO., 7585 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Heat Advertisement, Page 5

**CHROMALOX** 10-0
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 89 If you write the maker



for long-term service satisfaction and economy...

*say B&W before you say*

**CARBON, ALLOY OR STAINLESS STEEL TUBING**

*for any Pressure or Mechanical Application*

Call on your B&W Tube Representative. Because of his factory training in cost-saving "tube technics" . . . because he sells only tubular products . . . he may help you save time and trouble in obtaining your tubing requirements.

*Write for latest literature*

TA-1592-G

**THE BABCOCK & WILCOX TUBE COMPANY**
General Offices: Beaver Falls, Pa.
Plants: Alliance, Ohio and Beaver Falls, Pa.
Sales Offices: Alliance, Ohio • Beaver Falls, Pa. • Boston 16, Mass. Chicago 3, Ill. • Cleveland 14, Ohio • Detroit 26, Mich. • Houston 2, Texas Los Angeles 15, Calif. • New York 16, N. Y. • Philadelphia 2, Pa. St. Louis 1, Mo. • San Francisco 3, Calif. • Syracuse 2, N. Y. Toronto, Ontario • Tulsa 3, Okla.

BREVITY—Identify by IEN - 90 If you write the maker

## COUNTING . . Predetermining unit actuates circuit at preset total

Source: STREETER-AMET CO.
4103 N. Ravenswood Ave., Chicago 13, Ill.

**Interchangeable** digit boxes for a required number of digits are assembled in a container housing in this new electrical predetermining counter. Each has a knob on its face and a window showing its count from 0 to 9 so it can be set for a desired total across all of the digits. All connect into a control circuit to open or close contacts when the total is reached.

**Actuation** can be by any external equipment that will provide the required circuit-closing action such as a contact switch, photoce[illegible] amplifier, metal detector, electronic scaler, for coun[illegible] to 1,000 impulses per minute. Typical applications [illegible] counting the number of pieces in a package, the s[illegible] in a bundle, the units of length in a roll, Resetting is by manual or automatic means. A signal light indicates when the total count has been reached.

BREVITY—Identify by IEN - 91 If you write the maker

## FLOORS . . Resurfacing material applies on old concrete, wood, steel

Source: UNITED LABORATORIES INC.
16803 Euclid Ave., Cleveland 12, Ohio

**Several gradings are available**

**Superset** Plastic Rock is a new floor-resurfacing material that is supplied in unit quantities ready for application after addition of water. A unit contains siloxide rock, setting powder, asphaltic paste and bonding material. It is mixed with water to troweling consistency and then is spread over the surface to be repaired. Setting is in about 24 hours.

BREVITY—Identify by IEN - 92 If you write the maker

## STERILIZING . . Plastic foot bath holds gallon of astringent fungicide

Source: FOAM-X CO.
330-34 W. Alamar Ave., Santa Barbara, Calif.

**New foot bath** has been developed to hold a reserve supply of the company's Foam-X solution, a non-toxic fungicide. It feeds the liquid to a sponge pad as it is removed from the pad by workers walking over it in a shower room. The gallon supply is sufficient for 1,500 foot treatments. Refilling is necessary at less frequent intervals than for the previous smaller bath.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 93 If you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

**IPCO LAMP CHANGERS**

PRACTICAL • TIME SAVING • PREVENTS PERSONAL INJURIES

FOR CEILINGS, SIDE WALLS, ELECTRIC SIGNS, ETC. • HEAD ADJUSTS TO ANY ANGLE

Designed to remove and replace lamp bulbs in high and out of way places . . . Works like human hands on the end of a pole . . . Handles lamps up to 500 watt; pole lengths 6', 12' and 18'.

*Write for Bulletin F-11*

IPCO *Safety Equipment for all Industries*
**INDUSTRIAL PRODUCTS COMPANY**
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 94 If you write the maker

# CUT CARTON COSTS

*by making your own!*

The Palmer Continuous Motion Carton Former offers many advantages over purchasing factory-processed cartons. Using inexpensive die-cut blanks, this remarkable machine turns out as many as 102 perfectly formed cartons a minute. The savings on material alone often pays for the machine in a matter of months! It has a wide size range, and is easily adaptable to virtually any form of single- or double-walled carton. And operating costs are kept at a minimum, since the Palmer requires no supervision except for occasional feeding of blanks.

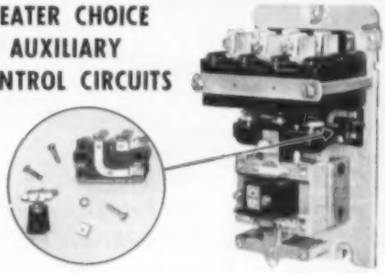
*Write for literature giving full information*

• CARTON DIVISION •

**PACKAGE MACHINERY COMPANY**
SPRINGFIELD, MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE TORONTO

BREVITY—Identify by IEN - 95 If you write the maker

## GREATER CHOICE OF AUXILIARY CONTROL CIRCUITS



When you use Ward Leonard 4110 magnetic across-the-line starters, you have greater opportunity to arrange for auxiliary control circuits.

Where, before, only normally-open or normally-closed auxiliary contacts could be *added* to the standard normally-open auxiliary contacts (provided for maintaining purposes)—now you have your choice of open or closed *or double throw* auxiliary contacts. Double throw contacts can also be furnished for maintaining purposes.

For low contact resistance and long life, these contacts are silver-to-silver. Front-connected terminals are easy to get at for control circuit wiring.

Write for Bulletin 4110. WARD LEONARD ELECTRIC COMPANY, 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

**WARD LEONARD ELECTRIC CO.**
*Result-Engineered Controls*
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

BREVITY—Identify by IEN - 96 If you write the maker

# STOP DUSTS

. . . from Any Dust Source

**IMMEDIATELY . . . WITH DUSTKOP**

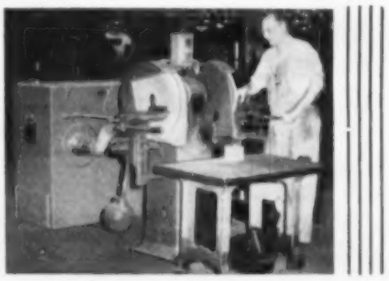
Available from Stock . . . 22 Standard Models Pretested . . . 300 to 10,050 cfm.

for
Surface, Tool, Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost *all* kinds of industrial dusts.

**Ask for Catalog 605-2. Describe dust problem for recommendation by return mail—no obligation.**

**Aget-Detroit Co., 401 Main St., Ann Arbor, Mich.**

*That's a Model 1150; takes all the dust from two 18" wheels. Same unit would handle dust from 3 surface grinders.*



BREVITY—Identify by IEN - 97 if you write the maker

# STANLEY HAMMERS

...each designed to do its job better

In the broad line of Stanley Hammers are types eminently fitted for a wide variety of work in industrial plants. Each of the types illustrated here is for a different kind of work.

For the packing and shipping room, and building maintenance work, the No. 51½ Stanley Nail Hammer. For machine shop and product service work the No. 310 Ball Pein Hammer and the No. 232 Machinist's Riveting Hammer. For assembly and light metal forming, the No. 594 Soft Face Hammer. Each is available in a variety of weights and sizes to meet all industrial needs. Stanley Tools, New Britain, Conn.

THE TOOL BOX OF THE WORLD

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 98 if you write the maker

# LEAKS COST MONEY

**PROTECT Your Oil or Steam Lines Against Leaky Joints with KEY GRAPHITE PASTE**

Thread and gasket connections on oil lines . . . either hot or cold . . . or high pressure steam lines . . . will not leak when sealed with Key Graphite Paste.

This sealing compound expands when it is heated, forming a perfect seal. Assembled joints will not freeze in service. Key preserves threads and gaskets and, above all, it is economical to use because it goes several times further than ordinary pipe dopes.

Ask your jobber for Key Graphite Paste or take advantage of our FREE sample offer.

*Send For FREE SAMPLE*

Try Key Graphite Paste at our expense

KEY Company

**KEY COMPANY**
2651 McCausland Ave., East St. Louis, Ill.

BREVITY—Identify by IEN - 99 if you write the maker

# Send Coupon Today for Your FREE Copy

"WHY IT PAYS TO ANCHOR YOUR MACHINES WITH *UNISORB*®"

Here's the book that tells you how to

- Avoid destructive floor-drilling with UNISORB machine anchoring . . . the modern way that needs no bolts, no lag screws.
- Eliminate 60%-85% transmitted machine noise and vibration.
- Achieve a safe, dependable machine mounting that lasts for years and years *with no maintenance.*
- Save time, expense and confusion when installing new machinery or repositioning present machinery.

**The FELTERS Co.**
210-1 SOUTH ST.
BOSTON 11, MASS.

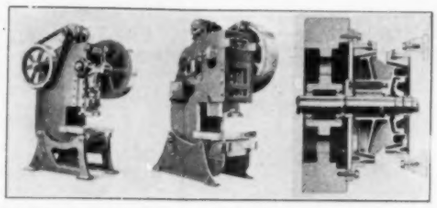
Gentlemen:
Please send my free copy of "Why It Pays to Anchor Your Machines with UNISORB."

NAME .....
COMPANY ..... TITLE .....
STREET .....
CITY & STATE .....

BREVITY—Identify by IEN - 100 if you write the maker

## PRESSES . . Open back inclinable, 10 to 200 tons, 1½ to 8 in. stroke

**Source: COLUMBIA MACHINERY & ENGINEERING CORP.**
**High & 4th Sts., Hamilton, Ohio**



**Two basic designs** are employed in the company's new line of single-crank open-back inclinable and gap-type presses. They are shown to the left and in the center of the illustration. One covers seven ratings from 10 to 45 ton. The other covers eight ratings from 60 to 200 ton. All are available in inclinable design. The 60 to 200-ton units also are built as gap presses.

**Frames** are welded steel. Main and crankpin bearings carry renewable bronze bushings. All sizes are arranged for push-button control including non-repeat, continuous and "inch" action. All sizes can employ the company's line of die cushions in removable assembly.

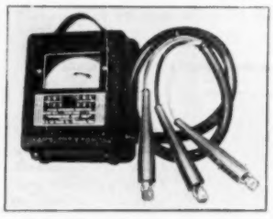
**The new Alcone** pneumatic cone clutch and brake with electric control are standard on the 60 to 200-ton machines. This clutch, shown schematically to the right in the illustration, assembles two cone friction surfaces on its aluminum frame to engage a cone surface in the flywheel or alternately a stationary brake surface for drive and stop. It is operated by air pressure admitted through the end of the crankshaft to move the clutch housing axially on the crankshaft against brake applying springs when the drive is to be engaged. A mechanical clutch is standard on sizes to 20 ton. An air-operated clutch with mechanical or electric control is supplied on 25 to 45-ton assemblies.

**Bulletin 1000,** 8 pages, presents illustrated description.

BREVITY—Identify by IEN - 101 if you write the maker

## TESTING . . Phase sequence indicator, 50 to 600 volts, 25 to 400 cycles

**Source: H. H. SELL ELECTRIC CO.**
**3238-42 Dakota Ave., Minneapolis 16, Minn.**



**Three leads** representing each of the phases in a 3-phase ac. circuit issue from the housing of this new Selco indicator and are fitted with connection clips to apply on the conductors in a circuit of unknown phase sequence. A white-enameled aluminum disc carrying an arrow rotates on ball bearings, is viewed through a 1¾ by 3 in. window in the 5½ by 3 by 6-in. metal housing.

**The arrow** indicates phase identification by its direction in connection with letters and figures on the housing face. The new instrument is a further development of the unit previously described IEN-1561-48 for circuits to 120 cycles.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 102 if you write the maker

## Bulletin 800 Push Buttons

- Standard, heavy duty, or oiltight enclosures
- Hundreds of types and combinations

Double-break, silver-alloy contacts in these rugged push button stations insure long service without failure. An almost endless variety of combinations makes them adaptable to every need. Special buttons, pilot lights, selector switches, etc., available in the same housings to meet your specific needs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

**ALLEN-BRADLEY**
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 103 if you write the maker

# ELWELL-PARKER Trucks

Carrying loaded charging bucket, weighing 9630 lbs., to cupola.

*Save 80 Man-Hours Daily!*

When 2 Elwell-Parkers replaced hand trucks at a prominent southern foundry, they released 10 laborers for other duties. Operations previously hazardous are now done with ease and safety. After 18 months' steady service, carrying 450,000 lbs. per shift, the E-P trucks have required only minor repairs.

87 types of E-P industrial power trucks are serving 300 different industries.

**FREE BULLETIN** describes notable savings by E-P trucks. Write for copy of "Industrial Logistics", and name your product.

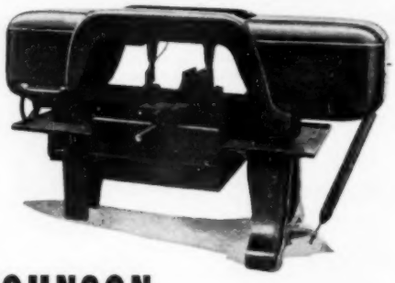
**THE ELWELL-PARKER ELECTRIC COMPANY**
4060 St. Clair Avenue • Cleveland 3, Ohio

BREVITY—Identify by IEN - 104 if you write the maker

# Thousands In Use

BUT SELDOM SEEN ON THE RESALE MARKET

**Because Users Keep Them – They Won't Wear Out**



**JOHNSON BAND SAWS Are a Fundamental Tool – Excellent Quality and Standards.**

These superior saws stay on the job year after year, giving trouble-free service, because they're made right, from the best standard parts obtainable. They are the product of a long established, thoroughly experienced Company with a reputation for offering top values in modern metal-cutting equipment. For greater capacity, speed and efficiency, be sure to choose a Johnson Saw. Model J, pictured, 10" x 18" capacity, Model B, 5" x 10" capacity. Write for catalog today.

**JOHNSON MANUFACTURING CORP.**
ALBION, MICHIGAN

BREVITY—Identify by IEN - 106 If you write the maker

For Better Products . . .

For Better Production . . .

**Titeflex**

**ALL-METAL Flexible Tubing**

As a component part of your equipment . . . or at work in your own plant . . . Titeflex can give you a new high efficiency. Titeflex is *all-metal*. It has the inherent strength of metal *plus* permanent flexibility. Here are the facts:

★ Sizes and types for temperatures from minus 300°F. to 1650°F. and several thousand pounds pressure.

★ Made in brass, bronze, stainless, Monel and Inconel to solve most problems of corrosion and abrasion.

Regardless of your use for flexible tubing you'll find it will pay to specify Titeflex.

*Write for complete literature*

**TITEFLEX, INC.**
500 Frelinghuysen Ave., Newark 5, New Jersey

TITEFLEX STAYS TIGHT WHEN THE GOING IS TOUGH

BREVITY—Identify by IEN - 107 If you write the maker

**READY FOR INSTANT SERVICE**

A Horton elevated water tank is always ready to give you 'round-the-clock service. The reason for this dependable performance is gravity pressure.

Consider this fact when you install or expand a fire protection system. Your decision may save both lives and money.

Horton elevated water tanks with ellipsoidal bottoms are built in standard capacities from 15,000 to 500,000 gallons. State capacity, height to bottom and location when requesting prices.

**CHICAGO BRIDGE & IRON COMPANY**
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 108 If you write the maker

reduce deadweight
...increase payloads
WITH **J&L**

**J&L STEEL**

# OTISCOLOY

HI-TENSILE STEEL

Reduce the weight of structures as much as 35% with J&L Otiscoloy—without the loss of strength.

**J&L OTISCOLOY:—**

- √ **Has twice the yield strength of mild steel**
- √ **Has greater fatigue resistance than mild steel**
- √ **Is resistant to abrasion**
- √ **Has atmospheric corrosion resistance 6 times better than carbon steel**

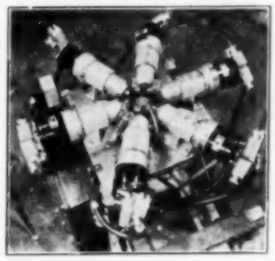
Otiscoloy can be formed hot or cold, welded, forged, flame-cut and otherwise worked by standard methods. Here is a modern steel that is worth your investigation. For further information about Otiscoloy, write for your copy of "Otiscoloy—High-Tensile Steel."

**JONES & LAUGHLIN STEEL CORPORATION**
455 Jones & Laughlin Building, Pittsburgh 19, Pennsylvania

BREVITY—Identify by IEN - 109 If you write the maker

## DRILLING . . Special machine drills seven holes in an aircraft bolt

**Source: PRECISION THREAD ENGINEERING CO.**
**2542 Park Ave., Detroit 1, Mich.**



**New assembly** of the company's standard drill heads is illustrated to include six spindles in radial arrangement for the head of an aircraft bolt and one, not shown, for an axial center hole. The work is loaded and removed manually and is held by air pressure while the heads advance, drill and retract as required under electric interlocked control. Heads are available with capacity from 1/16 to 5/8 inch.

BREVITY—Identify by IEN - 110 If you write the maker

## HANDLING . . Plastic buckets, bottles in pint to 3 gallon sizes for acids

**Source: AMERICAN AGILE CORP.**
**5804-8 Hough Ave., Cleveland 3, Ohio**

**Polyethylene** seamless tubing is cut to length and fitted with bottom, cover and spout by gas welding in manufacture of this new line of acid-resistant containers. Each is leakproof, essentially indestructible and light in weight. Maximum size for the bottle is three gallons. The buckets are larger to meet specified requirements.

BREVITY—Identify by IEN - 111 If you write the maker

## PHOTOGRAPHING . . Developing tanks, stainless steel for X-ray darkrooms

**Source: GENERAL ELECTRIC X-RAY CORP.**
**4853-57 Electric Ave., Milwaukee 14, Wis.**

**Double-wall** construction features the construction of this new pair of stainless-steel tanks for use in X-ray darkrooms. Space between inner and outer walls is filled with spun-glass insulation on the four sides and also on the bottom. There is a 30-in. self-contained refrigerated master tank with copper cooling coils between the inner and outer walls for areas where tap water rises above 65 deg. F. Three tank sizes are available in multiples to meet given darkroom requirements.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 112 If you write the maker

**Why a VICKERS *Standard* Magnetic Amplifier can improve your controls**

HIGH PERFORMANCE—power gains up to 30,000
NO MAINTENANCE
RUGGED CONSTRUCTION—no moving parts
NO WARM-UP TIME
RESPONDS TO SUM OR DIFFERENCE OF SEVERAL SIGNALS
ALLOWS ELECTRICAL ISOLATION BETWEEN CIRCUITS

**Typical Applications**

Speed regulators • Voltage regulators • Servo systems—positioners and indicators • Hydraulic controls • Control relays • Temperature regulators • Lamp and furnace controls.

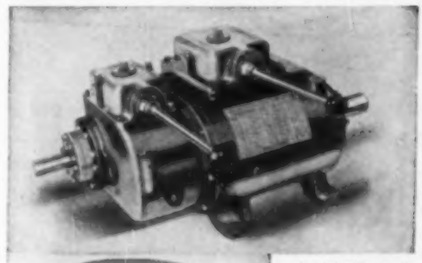
*Write for Bulletin 20-A describing Vickers complete line of Magnetic Amplifiers. Please make request on your letterhead.*

**VICKERS ELECTRIC DIVISION**
1809 LOCUST STREET • ST. LOUIS 3, MISSOURI

BREVITY—Identify by IEN - 113 If you write the maker

**WESTERN "SUPER" with 8 SPEED CHANGES**

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills, Bullard vertical turret lathes, etc. CAPACITY 10 HP. In geometric progression of 1.29 (total reduction of 6:1)



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios: 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can *supply the necessary V-belts, sheaves, output pulleys and motors from stock.*

*up to 50 h. p.* The Westerns: Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Bullard Mill Lathes, Gear Cutters, Die Sinkers, Boring Mills, etc.

**WESTERN TRANSMISSIONS**
WESTERN MANUFACTURING CO. 1455 SCHOOLCRAFT • DETROIT, MICHIGAN

BREVITY—Identify by IEN - 114 If you write the maker

**FEDERAL QUALITY**

**...now more important than ever**

With materials and equipment becoming harder to procure, quality is more important than ever. The name FEDERAL stands for quality. FEDERAL PRESSES are of the most advanced design—built to perform under the hardest usage and give many years of continuous service.

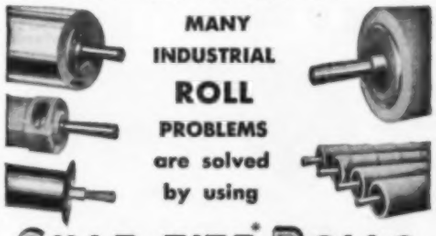
**New Federal "44"** with extra shut height, extra throat depth, and extra long stroke.

*Write for new catalog showing entire line—sizes 6 to 80 tons.*

**FEDERAL PRESS COMPANY**
503 Division Street, Elkhart, Indiana

**FEDERAL** *Carry Back Indestructible* **PRESSES**
35 YEARS OF QUALITY CONSTRUCTION

BREVITY—Identify by IEN - 115 If you write the maker



**MANY INDUSTRIAL ROLL PROBLEMS are solved by using**

# SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

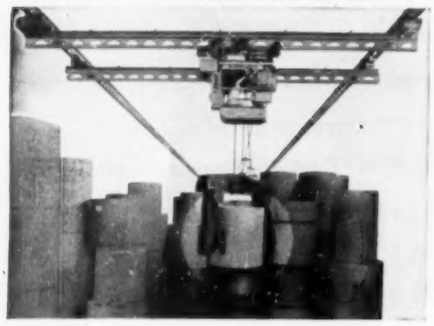
**SEND FOR NEW CATALOG NO. 48**
*Most complete publication of its kind*

*Industrial Roll Division*
**RODNEY HUNT MACHINE CO.**
273 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 116 If you write the maker

## 50% to 150% GREATER CAPACITY



### No Aisle Space Needed Here!

A Cleveland Tramrail crane and roll grab installation piles rolls vertically 42 ft. high and more. Utilizes entire floor area. Increases storage 50% to 150%. Cuts spoilage of materials tremendously. Handles rolls to 6000 lbs., 24" to 60" diam., 86" long.

GET THIS BOOK! Gives details on roll handling and storage.

Write for BOOLET 2012

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4212 East 285th St., Wickliffe, Ohio

**CLEVELAND TRAMRAIL**

BREVITY—Identify by IEN - 117 If you write the maker

## DILLON
### PRECISION DYNAMOMETER
INDICATE TENSION DIRECT IN POUNDS!

9 capacities from 0-500 lbs. up to 0-20,000 lbs.

Weigh only 8 lbs. 4 oz., measure 8¼" x 6¼" x 3"

An ideal laboratory or field instrument for indicating tension or stress in cable, rope, castings, assemblies, many other mechanical setups. Thousands in use by leading plants. Fits into "right" spots easily. Not injured by accidental overload. Has safety glass cover and maximum hand. PRICED LOW. Immediate shipment.

WRITE FOR INTERESTING BULLETINS

W. C. DILLON & CO., Inc. 3421-K South Circle Ave. FOREST PARK, ILL.

BREVITY—Identify by IEN - 118 If you write the maker

## BE SURE OF SCRATCH-FREE FINISHING!

## ELGIN DYMO
### DIAMOND COMPOUND

Pure, precision graded diamond particles . . . assure fast, dependable mold polishing—free of possible scratches due to oversize abrasive particles! DYMO comes ready to use—brilliantly color identified in all Bureau of Standards grades—and will not cake or settle. For finer, faster finishing, at lower cost, try Elgin DYMO today! Guaranteed to be in accordance with Bureau of Standards specifications.

*Write today for Free Demonstration—right in your own plant!*

INDUSTRIAL PRODUCTS DIVISION
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

BREVITY—Identify by IEN - 119 If you write the maker

## TRUCK . . Engine driven tractor rides on road and on railroad track

Source: WHITING CORP.
15629 S. Lathrop Ave., Harvey, Ill.

**Trackmobile** is a new tractor driven by a 60-hp. engine to approach and ride upon a railroad track on its pneumatic tired wheels. Then it can transfer its weight from the pneumatic tires to steel flanged track wheels to operate on the track. In this latter arrangement it presents a coupler to attach to railroad cars for yard movement.

**A feature** in the construction is the vertical pivot assembly of the coupler and the hydraulic cylinder with which it is moved upward to engage the car coupler and also to bear up under it. The action transfers part of the car weight to the tractor to provide drawbar pull of about 7,400 pounds.

**Four speeds** are 1½ to 9 mph. on the railroad track. Wheel base on the track is 66 in. and overall track length is 84 inches. Overall length for travel on the road is 120 in. which decreases to 114 in. when the pneumatic-tired wheels are retracted upward and inward. Overall height on the track is 68 inches. On the road it is 75 inches. Road width is 84 inches. Weight is 6,000 pounds.

BREVITY—Identify by IEN - 120 If you write the maker

## MOTOR CONTROL . . Magnetic contactor, 2 to 8 poles, 4 or 8 circuit assembly

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorn St., Hartford 6, Conn.

**Size 00, Type CRA** multipole convertible contactor in a new design available in 2 to 8-pole types for 6 to 600-volt ac., 6 to 230-volt dc. The assembly employs a movable floating contact unit that mounts either side out, provides for positive contact-pressure control by means of a center float device. The contacts are vertical to prevent accumulation of dust. Make-and-break action is horizontal. The moving contact is self-aligning with the contacts in the stationary base. These one-piece contacts are reversible without taking the contactor apart.

**Circuit conversion,** addition or removal of poles, is accomplished after removal of two terminal screws and two holding screws by inverting and transposing. Terminal screws are accessible and in line at the front. Auxiliary terminals provide connections for utility circuits. The contact cover plate has a matte finish to take terminal markings from a rubber stamp, pen or pencil. Overall dimensions are 2¾ by 2¾ in. in width and height. The 4-pole assembly is 2¼ in. front to back. The 8-pole unit is 3¼ inches.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 121 If you write the maker

## STANDARDIZE

### with OHIO "STOCK" GEARS and REDUCERS

Cut costs without sacrificing quality by standardizing with Ohio STOCK gears and speed reducers. Available in an infinite variety of types, sizes, capacities and ranges. 1000 to 1 your power transmission problems can be solved with Ohio STOCK gears and reducers usually "off the shelf" of your nearest Ohio Gear distributor. Ohio STOCK gears and reducers are made to precision standards in production quantities to cut costs to you.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
2345 EAST 170TH STREET • CLEVELAND 10, OHIO

OHIO GEARS

BREVITY—Identify by IEN - 122 If you write the maker

Picture of a Free Man!

*thanks to*

## CESCO's New #600 AIR-FED HOOD

Cesco's New #600 AIR-FED HOOD . . . *Approved by* U. S. BUREAU OF MINES *under "Class C" Respirator for use where* TOXIC *dust and fumes are encountered. Operating pressure 5 to 9 pounds.*

*FREE from weighty, rigid hoods*
*FREE from hoods with narrow, fixed vision!*
*FREE from toxic dusts!*
*FREE from harmful abrasive particles!*
*FREE from fatiguing, noisy air inlets!*
*FREE to work better, faster, more safely!*

• The exclusive advantages of CESCO's new #600 AIR-FED HOOD are bound to increase worker comfort, safety, and output. It is ideal for lead discing and other grinding operations, light sandblasting, paint spraying, etc. Write for more detailed information or see your Cesco Distributor.

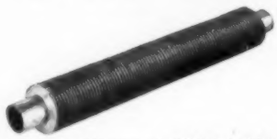
CHICAGO EYE SHIELD CO., 7326 Warren Blvd., Chicago 12, Illinois

**CESCO** FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Salt Lake City, Spokane, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 123 If you write the maker

## For efficient heat transfer "Ro-Fin" Tubes



There are nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING in production! Available in straight length, coils, or U-bends . . . with or without threaded end connections . . . or to be used with standard flare connections. "Ro-Fin" Tubes for efficient heat exchange are used and specified by nearly all large nationally known manufacturers!

For refrigeration condensers • fluid recovery condensers • diesel engine cooling • concealed radiation convectors • steam condensers • fan-type unit heaters • all heat transfer work

**Write for information on your heat transfer problems:**

**ROME**
TURNEY RADIATOR COMPANY

200 East Front Street • Rome, New York

BREVITY—Identify by IEN - 124 If you write the maker

MORE SPEED MORE SUPPORT

## CUT LABOR COST— PROTECT BAND SAW BLADES— CUT MORE MATERIALS!

Whatever you use BAND SAWS for (metal, wood, plastic, fibre boards, etc.), you can cut more materials—faster—with greater safety—eliminating needless blade breakage—by installing PADDOCK BALL-BEARING BAND SAW GUIDES! Interchangeable Ball-bearing wheels turning with blade give friction-free support! Works on new and old band saws! Easy to install—will pay for its low cost many times over.

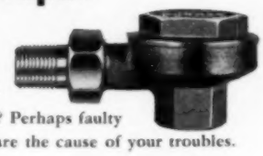
WRITE FOR CIRCULAR AND PRICES!

PADDOCK TOOL CO.
*Guide Makers Since 1920*
1418 Walnut Street, Kansas City 6, Mo.

**Paddock** BALL-BEARING BAND SAW GUIDES

BREVITY—Identify by IEN - 125 If you write the maker

# are you caught in your own traps?



Does your heating system fail to kick out as much heat as you kick in for fuel? Perhaps faulty or worn-out traps are the cause of your troubles.

If so, it will pay you to check with Dunham—leading manufacturer of radiator, thermostatic, float and thermostatic, closed float, inverted bucket and return traps. Dunham's 47 years of leadership in the heating equipment field stand behind these products . . . assuring you long and efficient service. Write today for further information.

DUNHAM
HEATING MEANS BETTER HEATING

C. A. Dunham Co.,
400 W. Madison St., Chicago 6, Ill.
*In Canada:*
C. A. Dunham Co., Ltd., Toronto.
*In England:*
C. A. Dunham Co., Ltd., London.

BREVITY—Identify by IEN - 126 If you write the maker

## Another product designed with Du Pont NEOPRENE

## NEOPRENE-coated fabric gloves resist heat, chemicals, abrasion . . . give added protection

On the toughest jobs in mills and factories, gloves made with neoprene offer maximum protection for workmen's hands. They're designed for rough treatment . . . furnish long-lasting, dependable service . . . are comfortable to wear.

Neoprene-coated fabric gloves are available in many styles for all types of jobs. The neoprene coating offers excellent resistance to heat, grease, oils and most chemicals. It withstands cutting and abrasion when handling objects with sharp or rough surfaces. And neoprene is flexible and resilient . . . won't soften or crack with age.

So when you need work gloves, or any resilient material to stand severe service, specify neoprene. It will assure you of a more efficient, longer-lasting product. While Du Pont does not make any finished products of neoprene, we'll gladly help you find a supplier. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division, Wilmington 98, Delaware.

**FREE! THE NEOPRENE NOTEBOOK**

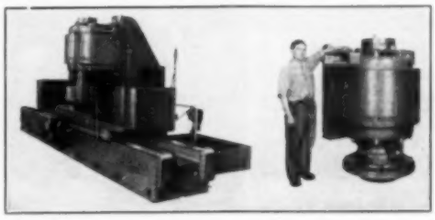
Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-1, Wilmington 98, Delaware.

**NEOPRENE**
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 128 If you write the maker

## GRINDING . . Surface type machine for large press tool reconditioning

**Source:** MATTISON MACHINE WORKS
543-47 Blackhawk Pk. Ave., Rockford, Ill.



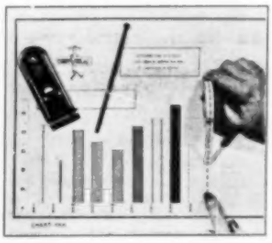
**Special assembly** of one of the company's Series 400S machines has been completed and put into service in reconditioning large press tools. The machine is characterized by the 100-hp. motor mounted on its vertical wheel spindle to drive the 32-in. wheel at 600 rpm. for fast stock removal.

**The work table** measures 60 to 120 in. in length in four sizes. Width is 28 in. on the finished portion, 40 in. overall. Maximum clearance under the wheel face is 25 inches. The spindle is mounted in preloaded ball bearings and is equipped with both hand and power feed. A motor-driven pump circulates coolant at 100 gpm. from a 350-gal. tank.

BREVITY—Identify by IEN - 129 If you write the maker

## MANAGEMENT . . Board, labels, tapes to make an organization or record chart

**Source:** CHART-PAK INC.
102-6 Lincoln Ave., Stamford, Conn.



**Self-adhesive** tapes in a variety of designs and spaced numerals and letters together with a collection of ruled adhesive labels or rectangular blocks are employed with a guide-lined laminated plastic board in this new chart-making equipment. The tapes are ½ in. in width and are supplied in rolls measuring 648 in. in tape length. The ruled rectangles are in sizes ranging from 1 by 2 in. to 5 by 8 inches. Two sizes of board are 12 by 18 in. and 22 by 32 inches. The guide lines are on ¼-in. spacing and are non-photographic blue.

**Applications** include the setting up of organization charts using the rectangles for titles and the tapes for connectors, assembly of records of various kinds with tapes representing given factors by design and by cut length. Tapes and rectangles adhere to the board on application, can be stripped clean when changes are to be made. A given setup can be photographed for record purposes.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

**FIND WHAT YOU WANT?**
Check the hundreds of listings in the index, page 102

BREVITY—Identify by IEN - 130 If you write the maker

## EXTRA Hand Protection at Lower Cost

PIONEER
# STANZOILS

Straight or curved finger styles

Non-slip fingers and palm —grip wet oily things as if dry

DuPont *milled* neoprene—long lasting, resistant to oils, acids, liquids

Greater tensile strength—greater tear resistance

N-51

Increase working efficiency and workers' hand comfort with PIONEER Stanzoils—for greater production, fewer injury claims. Stanzoils are made of *milled* neoprene exclusively—assures unequalled tensile strength, tear resistance. Their non-slip grip and efficient fit give workers new assurance and speed. Complete line of styles, sizes, weights, and colors. Write today for complete catalog.

*Synthetic Rubber Division*

**The PIONEER Rubber Company**
636 Tiffin Road, Willard, Ohio • Los Angeles

STANZOIL

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 131 If you write the maker

## NEW TYPE QB CIRCUIT BREAKER for NQB Lighting Panelboards

A better circuit breaker panelboard for AC systems. Write for Bulletin 1640. Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

ASK YOUR ELECTRICAL WHOLESALER FOR SQUARE D PRODUCTS

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 132 If you write the maker

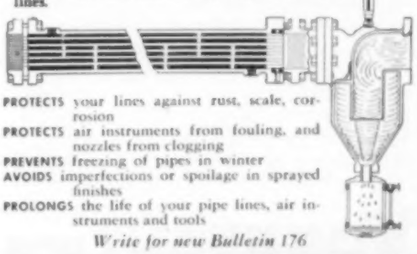
## You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condense and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

*Write for new Bulletin 176*

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 133 If you write the maker

## PLANT POWER-PROBLEM:

How to prevent costly outages from phase-to-phase flashovers and burndowns in open wiring in chemical atmosphere

## SOLUTION:

use OKOLITE-OKOPRENE SELF-SUPPORTING AERIAL CABLE

The combination of dust, moisture and acid fog prevalent around the Rumford, Me., mill of the Oxford Paper Company made it practically impossible to keep over-voltage insulators and wooden structures from becoming conducting to a point where even 2,300 volts resulted in phase-to-phase flashovers and burndowns.

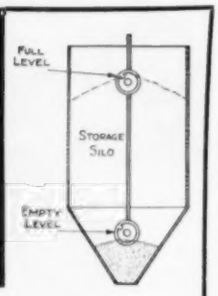
According to company officials, aerial cables with Okolite high voltage moisture and heat resisting insulation protected by non-conducting, weather and chemical resistant Okoprene sheathing have eliminated this trouble.

Compact, durable, dependable, and economical, Okolite-Okoprene Self-supporting Aerial Cable offers distinct advantages, indoors or out. For 52-page descriptive manual, write on your letterhead to The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY
OKONITE insulated wires and cables

BREVITY—Identify by IEN - 134 if you write the maker

**No Spillage No Shortage of Materials in Bins, Hoppers, etc. with**




## SYNTRON HOPPER LEVEL SWITCHES

—automatically maintaining constant full and empty levels of materials from fine to coarse—in bins and hoppers.

They will start and stop feeders filling hoppers—or ring alarm bells—or turn on lights—from material pressure, or the lack of it.

*Write for catalog data*

**SYNTRON CO.**
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 135 if you write the maker

## THREE MACHINES IN ONE!

The basic unit of the Vonnegut Abrasive Belt Grinding and Polishing Machine is readily adaptable to *lathe, swing* and *floor stand* applications. The lathe application (shown) is ideal for the kind of polishing which is commonly done by hand . . . and for light cylindrical grinding in the many shops (perhaps yours) where everyday requirements for this type of work do not justify investments in heavy duty cylindrical grinders. Eight-page bulletin showing and describing this unique, rugged, economical "little giant" in its three practical applications—*lathe, swing* and *floor stand*—is yours for the asking. Specify Bulletin No. Sixty-Two.

**VONNEGUT MOULDER CORPORATION**
1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 136 if you write the maker

## No More Frozen or Galled STUDS (even at 1800 F.!) Try this Amazing Money Saver..

## FREE Test Sample of the NEW FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

Eliminates Pitting of Stainless and Alloy Steels at all Temperatures!

**CUT costly stud breakage, heater dismantling time, pitting of metal surfaces!**

We'd like to send you a free sample of the new Fel-Pro C-5 "Hi-Temp" Thread Compound to try on your toughest thread compound problems, including alloy and stainless steels. Then you can see the amazing, money-saving results being obtained by the nation's largest refineries, utilities and process industries. Fel-Pro's exclusive Colloidal-Copper formula keeps metal parts separated, regardless of temperatures. Its neutral action solves the alloy and stainless steel pitting problems. One utility company reports that heater dismantling time has been cut from two days to four hours, by the use of Fel-Pro C-5 "Hi-Temp". Why not see what "Hi-Temp" can do for you . . . get your free sample and complete data sheet—*write today!*

**FELT PRODUCTS MFG. CO.**
1523 Carroll Avenue, Chicago 7, Illinois

BREVITY—Identify by IEN - 137 if you write the maker

## PACKAGING . . Corrugated container to ship and handle fastenings, parts

**Source: INTERNATIONAL PAPER CO.**
**5131-35 W. 65th St., Chicago 38, Ill.**

**Double-faced** corrugated fibreboard is employed in manufacture of a new box-type container that has shown some remarkable properties as a replacement for barrels, kegs, wood containers. The new unit is suited particularly for packaging, shipping and handling of bolts, nuts, screws, washers, nails. It serves as a container to move these and similar assembly parts through shop operations. It can be employed for re-shipment of processed work. It is delivered knocked down from the box maker to the user who can open and setup quickly without requiring any special tools.

**The construction** includes an inner container with top and bottom flaps, two outer sleeves extending from the two ends to slide into place and meet in the middle, two outer caps secured to the sleeves to form the closing for top and bottom as well as corner and edge reinforcement. The arrangement provides two thicknesses of the fibreboard minimum.

**Two sizes are shown** in the illustration beside the wood containers they are designed to replace. One such unit measures 11 by 11 by 17 in. inside and 12 by 12 by 18 in. outside. It is just right to ride in three by four assembly on a 37 by 49-in. pallet to which it can be strapped. Gross weight per unit, when filled, is 260 lb. maximum in line with standard specifications. Caps are held in place by strapping in shipment.

BREVITY—Identify by IEN - 138 if you write the maker

## PROTECTING . . Leather work glove designed for severe abrasive wear

**Source: STEINBERG BROTHERS INC.**
**443 Fourth Ave., 5th Floor, New York 16, N. Y.**

**Super Bonded** designates a new leather glove in which bonded assembly between thumb and palm takes the place of previous sewed seam construction. The flange of the thumb is bonded to the inside of the palm in patented construction that presents a double laminated thickness of leather at the connection.

**A glove** subjected to abrasive test at this point did not wear through at the thumb until after 500 abrasive strokes equivalent to about 400 hours of normal wear.

**The leather** is chrome tanned for softness combined with pliability and toughness. The palm and index finger are one piece. The seams are sewn with nylon thread with double stitching at tension areas. The knitted palm lining is soft and absorbent. The corrugated edge of the cuff prevents stubbing. List price is $12.50 and $13.50 per doz. in two styles.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 139 if you write the maker

## MULTIPLE DRILLING with a MULTI-DRILL

INCREASES CAPACITY UP to 800%

**ADJUSTABLE TO ANY HOLE PATTERN . . . FITS ANY DRILL PRESS**

If your production requires drilling from 2 to 8 holes in a work piece a MULTI-DRILL will cut costs and speed output up to 800%. The MULTI-DRILL is universally adjustable to any hole pattern—is compactly built to permit easy, unhampered operation with drill jigs or other special fixtures. Ruggedly built to take the wear and tear of high production work, the MULTI-DRILL will handle your long and short run multiple drilling jobs with ease—and economy. The MULTI-DRILL will drill on hole centers as close as ½"—handle drill sizes up to ⅝" in steel. Special adaptations available.

*There is a Commander MULTI-DRILL Distributor in your area. Write for his name, literature and complete details.*

**COMMANDER MFG. CO.**
4218 WEST KINZIE ST. CHICAGO 24, ILLINOIS

Product of *Commander* — Builder of the *Commander Tapper*

BREVITY—Identify by IEN - 140 if you write the maker

## Nutting FLOOR TRUCKS WHEELS=CASTERS

Here are two veterans of the Nutting line — proven resourceful and tough for faster material handling. These easy rolling, well balanced trucks get the job done right — on time! Your men will like to work with them — and their cost per year is hardly visible.

**Fig. 16— No. 24**
Steel-bound hardwood frame, extra heavy axle.

**Fig. 1136**
**Non-Tilting Bar Handle Truck**
Capacity 2500-3000 lbs. A proven veteran for all-round service. Pressure-lubricated roller bearing wheels. Range of sizes.

**Write for Bulletin 49-G**

Nutting makes everything in floor trucks, wheels, casters. Representatives in principal cities.

See your classified telephone directory or write direct to

our 60th year **NUTTING TRUCK AND CASTER COMPANY**
2012 DIVISION STREET, FARIBAULT, MINNESOTA

BREVITY—Identify by IEN - 141 if you write the maker

## For Tight, Safe Connections on Hose for Every Service...

## "BOSS"

**WASHER TYPE FEMALE COUPLING STYLE W-16**

For all high or low pressure steam, air and fluids, including oil, hydraulics, butane, etc. Furnished with efficient "Boss" Offset and Interlocking Clamps. Designed to provide unequalled strength, efficiency and safety, and to prevent damage to hose ends. Sizes ¼" to 6". Cadmium plated—rustproof.

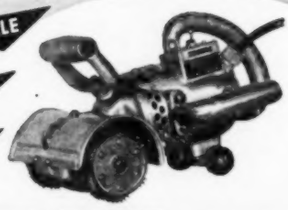
*Stocked by Manufacturers and Jobbers of Mechanical Rubber Goods.*

**DIXON VALVE & COUPLING CO.**
HANCOCK ST. and COLUMBIA AVE., PHILADELPHIA 22, PA., U.S.A.
BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON • TORONTO

BREVITY—Identify by IEN - 142 if you write the maker

## ZIP OFF

SCALE
RUST
PAINT



with **AURAND** CLEANING TOOLS

AURAND rotary chipping action quickly, easily, *thoroughly* removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS.
WRITE TODAY TO DEPT. 649

**AURAND MFG. & EQUIP. CO.**
2643 Colerain Avenue • CINCINNATI, OHIO

BREVITY—Identify by IEN - 199 If you write the maker

## 8-Page Condensed Catalog

shows Veeder-Root Counters for mechanical, electrical and manual operation. Write for a free copy.

**VEEDER-ROOT INC.**
HARTFORD 2, CONNECTICUT

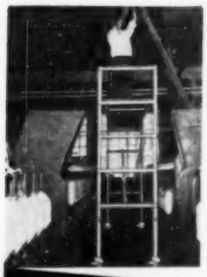
BREVITY—Identify by IEN - 200 If you write the maker

**SAVE up to 70% with Aluminum Alloy "UP-RIGHT" SCAFFOLDS**

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB

**30' Mobile TOWER SCAFFOLD**
which took only 10 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

**Mobile 6', 8' or 10' SPAN SCAFFOLDS**
"The only way to get over looms and spinning frames", reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.



**ROLL-AROUND and SAFETY CAGE**
Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

**WRITE FOR DESCRIPTIVE CIRCULAR**

**"UP-RIGHT" SCAFFOLDS**
DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.
FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

BREVITY—Identify by IEN - 202 If you write the maker

## PRINTING . . Belt feed machine makes contact prints, rates 11½ in.

**Source:** CHARLES BRUNING CO.
100 Reade St., First Floor, New York 13, N. Y.

**Copyflex** is a new design in the company's line of Diazo type contact-printing machines. It is intended primarily for office use to make clean smudge-proof copies of correspondence, instructions, notices, sketches, drawings, orders from translucent or opaque originals that have been typed, printed, or drawn, on one or both sides in the case of opaque originals. Capacity is for prints to 11½ in. in width. Cost is about 2 cents, including all charges, for a standard-size letter sheet.

**The process** employs a paper coated with an aniline dye which is bleached on passage into the machine in connection with a translucent original except for the areas under the markings on the original. They shield the dye from actinic rays emitted by a light source in the housing. The exposed copy sheet continues through a developing and drying section to issue ready for use. The original is returned to the operator.

**Opaque originals** are put through with sensitized reflex film on which an initial contact copy is made. One exposed and developed film sheet for each side to be copied is then employed as the original to make a required number of copies. Each copy has clear black lines. The machine can be located and relocated as desired for connection to a 110-volt 60-cycle ac. source. It can be operated by any individual without extensive training. Overall dimensions are about 30 by 28 by 50 inches.

BREVITY—Identify by IEN - 203 If you write the maker

## TRUCK . . Three-wheel pickup unit and two-wheel scooter, 2 hp. engine

**Source:** GLOBE CO.
Box 922-A, Joliet, Ill.

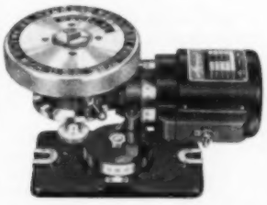
**Globester** trade names new engine-driven vehicles for utility uses in pickup operation and in personnel transportation. One is a three-wheel assembly with a package compartment in the rear as shown at the left in the illustration. The other is a two-wheel scooter. Both have front package baskets.

**Drive** is by a single-cylinder 2-hp. air-cooled 4-cycle Continental gasoline engine mounted in rubber and connecting through a centrifugal clutch that takes hold, shifts into high and releases at predetermined engine speeds. Mounting is on 4.00 by 6 pneumatic tires. Weights are 215 and 140 pounds. Controls include hand and parking brakes, hand throttle, choke. The pickup unit will carry a 150-lb. payload.

BREVITY—Identify by IEN - 204 If you write the maker

## GRINDING . . Carbide tool fixture positions bits on grinding machine

**Source:** HAMMOND MACHINERY BUILDERS INC.
1613 Douglas Ave., Kalamazoo 54F, Mich.



**Model VC** designates new adjustable work-holding fixture to resharpen square, rectangular, triangular and circular-section carbide bits in a grinding machine and also to grind chip-breaker grooves. It is available with a collet chuck to hold any shape. Sizes range from ⅜ to 1 in. based on the round section.

**Style M,** illustrated, mounts a small motor to rotate the collet for round work. The motor is locked out and the collet is indexed by hand to locking stops for other than the round section. Style H omits the motor and provides a knurled knob for the index action or for hand rotation. Axis of the collet can be set in any position between 90 deg. on one side of vertical and 45 deg. on the other. Rotation through 360 deg. is provided on the vertical axis.

**Height** from base to the top of the collet is 7¼ in. when it is set in vertical position. The base measures 7½ by 4¼ inches. List price with one round collet is $275 with the motor and $210 on the hand-operated design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 205 If you write the maker

BREVITY—Identify by IEN - 206 If you write the maker

*GRINDING — With saucer grinding wheels, they swiftly smooth welds and casting ridges; do faster, smoother grinding in many general applications.*

## Here's How Black & Decker SANDERS Speed Up Surfacing Jobs!

*SANDING—With abrasive discs, B&D Sanders handle all sanding in a jiffy, from fast metal-removal to satin-smooth finishing.*

*WIRE BRUSHING—With "Whirlwind" Wire Cup Brushes, they zip off old paint, rust, scale; clean castings, tanks, sheet metal and soldered joints.*

**BLACK & DECKER ELECTRIC SANDERS** are fast, versatile, easy to handle, built to take it! Their full-power B&D universal motors are *tailored for the job,* give you high-speed performance. Their spiral beveled gears of heat-treated alloy are match-lapped, spline-mounted for greater strength. All ball bearings are on steel inserts, grease sealed. All vital parts are sealed against dust and dirt.

You have your choice of four models—the 7" Special Sander for intermittent service; the 7" Standard for general purpose; and the 7" Heavy-Duty and 9" Heavy-Duty models for more continuous work and greater output. See your nearby B&D Distributor for a demonstration of these and other timesaving, cost-cutting tools. Write for free catalog to: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

**Black & Decker** PORTABLE ELECTRIC TOOLS

DRILLS BENCH GRINDERS PORTABLE GRINDERS HAMMERS

BREVITY—Identify by IEN-208 If you write the maker


# Surface PYROMETERS for every purpose

The routine use of CAMBRIDGE Surface Pyrometers takes the guesswork out of temperature determination in many industries. The CAMBRIDGE is accurate, dependable, rugged, quick-acting and easy to use. The Roll Model is for checking surface temperatures of moving rolls. The Needle Model is for insertion into materials in a plastic or semi-plastic state for batch temperature determination. The Mold Model is for checking surface temperatures of mold cavities and surfaces of almost any contour.

*Send for Bulletin 1945A.*

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal
New York 17, N. Y.

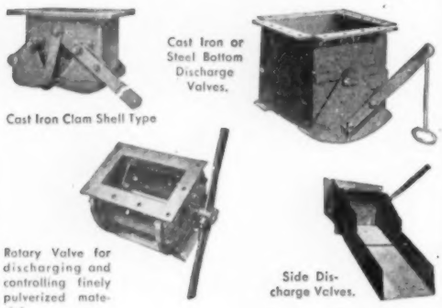
**CAMBRIDGE**
PIONEER MANUFACTURERS OF
**PRECISION INSTRUMENTS**

Moisture Indicators and Recorders • Physical Testing Instruments
Laboratory Instruments for A. C. and D. C. • Galvanometers • Engineering Instruments • Gas Analysis Equipment • Physiological Instruments and many other Mechanical and Electrical Instruments


BREVITY—Identify by IEN-209 If you write the maker


# BIN VALVES

A wide variety of Valves to meet most any requirement. Also Feeders, Conveyors, Bin-level Indicators and Rotary Bin Check Valves.




*We will be glad to send along more complete information. Write today.*

**JEFFREY**
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 N. Fourth Street Columbus 16, Ohio


BREVITY—Identify by IEN-210 If you write the maker

# THE POWER TOOL JOURNAL
*Packed with detailed job data*

DELTA MILWAUKEE

Profitable reading—published by the world's leading maker of light power tools. Gives you technical data on Building special-purpose, high-production machines at low cost. Getting more from green help. Cutting maintenance costs. Unusual applications of Delta machines in other plants. Other useful ideas that help you do a better tooling and production job.

Get on FREE subscription list! Send your name, title, company name and address.

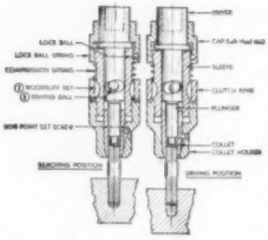
DELTA POWER TOOL DIVISION
Rockwell Manufacturing Company
614A E. Vienna Ave., Milwaukee 1, Wisconsin

WM-43


BREVITY—Identify by IEN-211 If you write the maker

## WRENCH . . Stud driving tool to place and remove specified studs

**Source: TITAN TOOL CO.**
**52 Main St., Dept. Y, Fairview, Erie Co., Pa.**



**Collet chuck** in the nose of this new stud driver takes the outer threaded end of a stud to be driven into position and holds by grip on the threads rather than end pressure while the tool is turned by hand or power. Upon reversal a pitched slot and ball releases pressure on the chuck and the tool can be backed off to leave the stud in the work.

**Setup to remove** studs starts with application as in driving, follows by screwing down a cap that prevents the backup loosening action. Then reverse rotation will remove the stud from the work. As soon as it is out the operator employs two wrenches to open the driver, remove the stud and set up for the next one. Three sizes in the line take studs to $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{5}{16}$ inch. Overall tool lengths are 5⅛ to 6½ inches. Body diameter is 1⅝ in. on two and 2⅛ in. on the third.

BREVITY—Identify by IEN-212 If you write the maker

## ELECTRIC CABLE . . Non-metallic sheathed, No. 14/2 to No. 4/3 sizes

**Source: ROME CABLE CORP.**
**440 Ridge St., Rome, N. Y.**

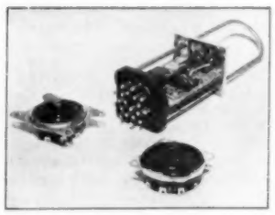
**RoFlex,** the company's non-metallic sheathed electric cable for building circuits, is now available with a new gray outer finish. It is smooth for pulling, clean to handle, provides lightweight construction with conductors easy to strip clean. The overall braid is made of glass and presaturated yarn for resistance to mold and rot. The cable is surface printed with size, voltage and name for identification.

**Twelve sizes** without ground wire range from No. 14/2 to No. 4/3. The first three sizes in each of the 2 and 3-wire units are supplied is 250-ft. coils. The other three measure 125 feet. Six additional sizes with a ground wire from No. 14/2 to No. 10/3 are available in 250-ft. coils.

BREVITY—Identify by IEN-213 If you write the maker

## CONNECTOR . . Molded plastic base, sockets to unitize electronic parts

**Source: ALDEN PRODUCTS CO.**
**115-19 N. Main St., Brockton 64, Mass.**



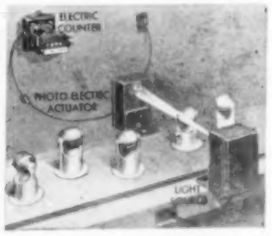
**Relays, filters, stepping** switches, condensers, small components can be mounted in various combination assemblies with solder connection into the ends of hollow pin plugs secured in the base in this new connector. A push-pull handle can be added and the complete unit plugged into the mating molded-plastic socket. The latter is available for chassis and rack mounting.

**Base and sockets** are made with openings for eleven or twenty pins made of nickel-plated brass. They are short and stubby. The layout orients the base and socket. Alden "20" is the designation. The base measures about 1¾ by 1¾ by ⅜ inch.

BREVITY—Identify by IEN-214 If you write the maker

## COUNTING . . Photoelectric equipment includes light source, cell, counter

**Source: AUTOTRON CO.**
**Box 722-C, Danville, Ill.**




**Counting Eye** designates new assembly of light source, photoelectric cell with suitable amplifier and relay, and an electrically-actuated counter. The equipment is available for 110 or 220-volt 60-cycle ac. as specified. Light source and cell assembly are mounted in housings that measure 3¾ by 2½ by 5 in. each. They mount on opposite sides of a conveyor line so passing objects interrupt the light beam for counter actuation. The counter unit can be assembled in any convenient location for electric connection to the photocell relay at the operating location.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN-215 If you write the maker


# McDonald CLEARVUE DUSTFOE RESPIRATOR

APPROVED! **BY WORKMEN**
Light in weight—comfortable—does not interfere with vision or working freedom

APPROVED! **BY MANAGEMENT**
Long lasting—sturdy—easily washed and sterilized—every part replaceable

APPROVED! **BY U.S. BUREAU OF MINES**
Approval No. 2148 for all dusts including lead and other toxic dusts. Approval No. 2147 for pneumoconiosis-producing and nuisance dusts and mists

*Write for Bulletin and Prices*

**B. F. McDONALD CO.**
Manufacturers & Distributors of Industrial Safety Equipment
5110 S. HOOVER ST., LOS ANGELES 37, CALIF.
Other Offices in San Francisco & Houston


BREVITY—Identify by IEN-216 If you write the maker

*with Pressure-Sensitive*
**KUM-KLEEN LABELS**

For vital instructions right where they're needed...as long as they're needed...General Controls use pressure-sensitive *KUM-KLEEN* Labels.

*KUM-KLEEN* Labels are applied without moistening at production-line speed—stick and stay stuck, without popping or curling, even through extremes of heat and humidity. They adhere permanently to all hard-to-label surfaces—cellophane, glass, metal, plastics, etc. The on-the-product cost of *KUM-KLEEN* Labels is lower than other methods of labeling.

To affix installation and service instructions, diagrams, patent numbers and other vital data, use *KUM-KLEEN Labels.*

Kum-Kleen

*SEND FOR DETAILS AND SAMPLES*
**Address Dept. IEN-1**
AVERY ADHESIVE LABEL CORPORATION
MONROVIA, CALIFORNIA
Factory Branches in All Principal Cities


BREVITY—Identify by IEN-217 If you write the maker

You Can't Beat
**VIKING'S**
Complete Line of
**ROTARY PUMPS**

"In all my experience of buying rotary pumps, I never saw the equal of the range in size and style of Viking pumps. No matter what I need, there seems to be a Viking built just for that purpose." So says one man looking for the answer to his rotary pump problems.

Don't forget, the next time you need rotary pumps, see Viking first. Check the complete line.

*For a good start, ask for free Bulletin 515F today.*

FIG. 12

VIKING AN HONORED NAME IN PUMPING

**VIKING PUMP CO.** Cedar Falls, Iowa — See Our CATALOG IN SWEETS

BREVITY—Identify by IEN - 218 If you write the maker

## There's a difference between COMPACTNESS and SPACE ADAPTABILITY...

The MULTICLONE has BOTH!

**IN SELECTING dust recovery equipment, every foot of space saved is that much more valuable area available for other equipment. And the compactness of the equipment you select is just one of several ways to save plant space. Equally important is the adaptability of the equipment to space limitations within an existing plant.**

*And this is how the* MULTICLONE *makes two-way savings in space:* The MULTICLONE *itself* is unusually compact, requiring as little as 1/6 the floor space, ¼ the cubic space of other units of comparable performance.

In addition, the shape of the MULTICLONE is readily adaptable to various space requirements and can be varied to fit odd-shaped or restricted areas that would otherwise be waste space.

For this reason you can fit the MULTICLONE into unbelievably small spaces, thus saving valuable plant area. But space-saving is just one of many MULTICLONE advantages. It is unusually efficient...has no high-speed moving parts to maintain, no screens to clean or replace...is simple to install, easy to service...and has many other important advantages.

**Get the full story by sending for this MULTICLONE booklet!**

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 219 If you write the maker

## The World's Most Efficient CONCRETE DRILL

### THE TILDEN ROTARY KONKRETE KORE DRILL

gives lowest cost per foot of concrete drilled because it:

- Drills at 2 to 6 inches per minute
- Drills reinforcing bars and beams in concrete
- Drills up to 30 feet of concrete without resharpening
- Gives straight, clean holes for anchors, conduit, etc.
- Uses ordinary electric drill

*Quiet cutting action gives minimum disturbance of surrounding activities.*

U. S. Pat. No. 2600674

New, exclusive "centerless" design of drills from ¼" through 7/16" diameters is 3 to 4 times more efficient than ordinary pointed drills. Concrete is penetrated faster with 80% less pressure. Prices on these drills have been reduced by as much as 50%.

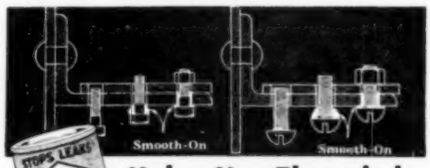
**Tilden drill bits are available in standard sizes of from ¼" to 4" diameters. Quotations on larger sizes on request.**

*Write for catalog*

with complete details on these revolutionary concrete drill bits.

**TILDEN TOOL MANUFACTURING COMPANY**
1995 NO. FAIR OAKS, PASADENA 3, CALIFORNIA

BREVITY—Identify by IEN - 220 If you write the maker



## Holes Not Threaded-But Bolts *Hold*

With Smooth-On No. 1 Iron Cement you can make bolts, studs or machine screws hold in unthreaded or oversize holes. You thus save time, labor, expense. And the parts stay tightly together, because Smooth-On expands slightly in hardening.

Use Smooth-On No. 1 for bigger repairs, too. Seal cracked casings of pumps, valves, condensers, etc., with it. Stop leaks in pipe lines, tanks, radiators. Tighten loose parts and fixtures all over the plant. Get Smooth-On No. 1 in 7 oz., 1 lb., 5 lb., 20 lb. or 100 lb. sizes. If your supply house hasn't it, write us.

SO-315

**FREE REPAIR HANDBOOK**

40 pages describing Smooth-On repairs that can save you time and money. 170 illustrations. Write for YOUR free copy now.

Smooth-On Mfg. Co., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

**Do it with SMOOTH-ON**
THE IRON CEMENT OF 1000 USES

BREVITY—Identify by IEN - 221 If you write the maker

## THREADING . . Two spindle machine mounts die heads for work to 1 inch

**Source: KENT MACHINE CO.**
**111-15 Portage Terrace, Cuyahoga Falls, Ohio**

**Self-opening** die heads on the two horizontal spindles in this new bolt-threading machine are driven at adjustable speed between 450 and 132 rpm. by a 2 hp. motor mounted in the base. Change gears set desired speed for work from ½-in. 20 threads to 1-in. 8 threads. The motor connects by V-belts, operates at 1,200 rpm. The machine is designed to take screw blanks and milled, upset or forged parts with regular or irregular heads and for alternate operation of the spindles with **one worker in attendance.**

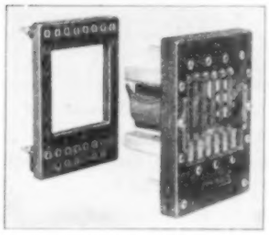
**The work** is secured in holders designed for each specific piece and mounted on ball-bearing bushings to ride round bar ways. Advance to engage the chasers is by handwheel movement. The wheel is then released and the holder follows the threading action until a trip opens the head. Handwheel **retraction clears the work and recloses the head for the next piece to be threaded.**

**The machine** will take a blank to 24 in. in length and will cut a thread to 6 in. in length and 1 in. in size for bolts or ¾ in. for pipe. Dimensions are 43 to 28 by 41½ inches. Weight is 1,025 pounds. A feature is the coolant pump and its assembly to force the coolant through the die heads so it flows outward to clear the chips away from the cutting operations.

BREVITY—Identify by IEN - 222 If you write the maker

## RELAY . . Multiple contact assembly of six contacts, .008-second action

**Source: AUTOCALL CO.**
**146-50 Tucker Ave., Shelby, Ohio**



**Six contacts,** single-pole double-throw design, on fingers backed by a beryllium coil spring, are arranged in line back of a protecting glass window in the plastic housing of this new relay. Operating coils at the rear are available in the single assembly illustrated, in a double winding for independent actuation followed by holding, or in a latching arrangement for initial actuation followed by latch release as required. The assembly measures about 2 by 3½ in. in face dimensions.

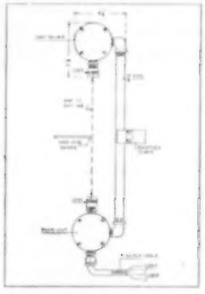
**The operating coils** are available for 24 to 150-volt dc. with current at .057 amp. on 110-volt dc. for action in 6 to 8 milli-seconds. Two contacts will break 1 amp. on 110-volt dc. when adjusted to a .025-in. air gap or .5 amp. on a .012-in. gap. Current carrying capacity is 8 amp. on 110-volt dc.

**Individual silver contacts** and prongs are one-piece construction to require no soldered connections to the contacts themselves. The prongs jack-connect into the circuit.

BREVITY—Identify by IEN - 223 If you write the maker

## CONTROL . . Photoelectric equipment to govern tracking, actuate counting

**Source: EXPERIMENTAL ENGINEERING CO.**
**P. O. Box 149, Bergenfield, N. J.**



**The light source,** the photoelectric and associated equipment in this new Model-PB electronic control equipment are enclosed in gasketed cast-iron boxes equipped with lenses and connected by a ¾-in. pipe. The assembly is water tight and suited for rough handling. The pipe serves as a support and also as conduit for the electric wiring. Applications include tracking control in winding operations as in paper mills, counting and sorting where the equipment must be protected against splash, determination of stock lengths passing through a process.

**The housings** are galvanized iron and measure 5 in. in diameter by 3 in. in depth. One encloses a 6-volt lamp to serve as light source and a transformer to operate the lamp on a 110-volt power source. The other encloses the phototube, an amplifier tube, a thyratron relay tube and a power relay with 3-amp. ac. rating. There is also a sensitivity control to adjust the operating point. The lenses on the two housing assemblies can be set at 4 to 12 in. apart by making the connecting pipe a given length.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 224 If you write the maker

## REDUCE HANDLING of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks* —individual units which lock together to form racks of any size, shape or capacity.

**STACKBINS IN STACKRACKS**

*Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa*

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

**STACKBIN SYSTEM**
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 225 If you write the maker

## YOUR "Just-Right" PUMP

DN, famous Worthington MONOBLOC—with built-in motor.

CN, frame-mounted—readily driven by any type of power.

**is among these 10,000 combinations**

No more compromising with a pump that isn't *just right* for the job.

From Worthington's vast selection of standard centrifugal pumps—you're sure to find the one that meets your specifications exactly.

No other line of pumps is so complete—capacities from 10 to 1800 gpm, heads to 535 ft, 40 sizes of casings, 200 combinations of frame-mounted designs —10,000 combinations in all!

*See Your Worthington Distributor*

**WORTHINGTON**

Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Division, Harrison, New Jersey

*The Good Right Hand of Industry*

BREVITY—Identify by IEN - 226 If you write the maker

## FRASSE for Aircraft Steels

Aircraft quality bars, tubes, and sheets in the grades listed below, all to Government specification, are standard stock items at Frasse:

| | | |
|---|---|---|
| Bars | Cold Drawn 4130 | AN-QQ-S-684a and AN-S-684 |
| Bars | Cold Drawn 4340 | AN-QQ-S-756a |
| Bars | Cold Drawn 8740 | AMS-6322 |
| Bars | Stainless Type 347 | 46-S-18-8a |
| Tubes | Cold Drawn 4130 | AN-T-69 and AN-WW-T-850 |
| Tubes | Cold Drawn 8630 | AN-T-15 |
| Sheets | Normalized 4130 | AN-QQ-S-685 |
| Sheets | Annealed 8630 | AMS-6355c |
| Sheets | Stainless Type 347 | AN-QQ-S-757 |

Chemical certification is provided with each shipment and Government inspection is arranged for where required. In addition, Frasse consulting technical service is always available to assist you in the application of these steels. For a quotation on your requirements, write:

**Peter A. FRASSE and Co., Inc.**

17 Grand St., New York 13, N. Y. 3911 Wissahickon Ave., Phila. 29, Pa.
50 Exchange St., Buffalo 3, N. Y. 157 Richmond Ave., Syracuse 4, N. Y.

BREVITY—Identify by IEN - 227 if you write the maker


Make your own Bearings!

**JOHNSON UNIVERSAL BRONZE**

● Completely machined solid and cored bars of highest quality are available in over 350 sizes. Every bar usable from end to end. Order from complete stocks from your local Johnson Distributor or factory branch.

WRITE FOR NEW CATALOG

Johnson Bronze

SLEEVE BEARING HEADQUARTERS

476 SOUTH MILL STREET • NEW CASTLE, PA.


BREVITY—Identify by IEN - 228 if you write the maker


engineers at Harris-Seybold chose GAST AIR PUMPS for three OFFSET PRESSES

Before adopting Gast Units, Harris-Seybold engineers put these rotary Air Pumps through their paces! In the factory, and in actual press rooms, careful checks were made on performance, construction, and dependability. And Gast Air Pumps proved their merits!

As a result, they are now standard equipment on 3 Harris-Seybold models, including their 22 x 34 two-color offset press.

Yes, there's a trend to Gast Air Pumps for presses and printing equipment . . . and for scores of other applications where trouble-free performance is vital. Write Gast, describing your original equipment problem. "Air may be your Answer!"

SEE OUR CATALOG IN SWEET'S FILE

Have you seen Gast Application Ideas booklet, showing 26 product problems and solutions? Sent on request.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS (TO THREE H.P.) · COMPRESSORS (TO 30 LBS.) · VACUUM PUMPS (TO 28 INCHES)

GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.


BREVITY—Identify by IEN - 229 if you write the maker


*Quick, Thorough Cleaning!*

General Electric Heavy-duty Vacuum Cleaners

In more and more plants, General Electric Heavy-duty Vacuum Cleaners are being used because they speed thorough cleaning of floors and above-the-floor areas.

These powerful cleaners also provide efficient portable dust control around machines, make gathering of small metal or other scrap easy. Wet pickup is also a feature of this model. Write for new catalogue showing all the models and sizes.

MAIL TODAY

General Electric Company, Dept 22-3534
1285 Boston Ave., Bridgeport 2, Connecticut

Send new catalogue showing General Electric heavy-duty cleaning equipment.

Name .....

Firm .....

Address .....

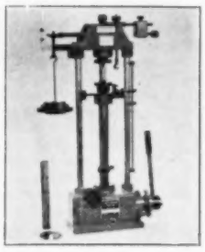
City ..... State .....

GENERAL ELECTRIC


BREVITY—Identify by IEN - 230 if you write the maker

## TESTING . . Hand operated machine for springs in compression and tension

Source: CARLSON CO.
277 Broadway, Room 1302, New York 7, N. Y.



**Specified length** under load, definite amount of deflection, given loading can be taken as the basis for spring testing by this recently improved machine in tension or compression. The machine takes springs to 12 in. in length, to 2⅝ in. in maximum outside diameter and has capacity for compression or tension from ½ oz. to 175 pounds.

**The lower** vertically movable head carries a platform on which to stand a compression spring and beside it a stud to secure the lower end of a tension spring. The vertical movement, following initial adjustment for spring length, is by a lever on the side of the base. Pressure or pull is applied and read at a beam-type scale at the top of the assembly. A scale at the side reads elongation or compression. Stops can be set on it as limits for production testing.

BREVITY—Identify by IEN - 231 if you write the maker

## SANDING . . Portable electric tool oscillates a 4½ by 8 inch pad

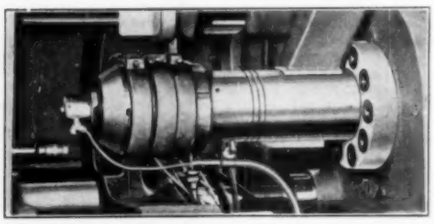
Source: CLARKE SANDING MACHINE CO.
9-13 Clay Ave., Muskegon, Mich.

**Vertical motor** operating at about 3,000 rpm. oscillates the abrasive-mounting pad in this new Model-OS Smoothie Sander. The motor operates on 110-volt 60-cycle ac. Tool weight is 8¼ pounds. Spring clamps hold abrasive paper in quickly interchangeable position. Steel parts are rust proofed.

BREVITY—Identify by IEN - 232 if you write the maker

## PLASTIC MOLDING . . Injection heater to handle thermosetting materials

Source: REED-PRENTICE CORP.
675-79 Cambridge St., Worcester 4, Mass.

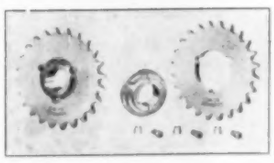


**Interchangeable operation** in molding thermoplastic and thermosetting materials is now possible with development of a new Kovac injection molding heater. The unit operates electrically, applies in place of the heater on the company's Type 10-D machine for thermoplastic materials. It heats the material as it is delivered from the supply hopper just prior to injection at pressures to 47,000 pounds.

BREVITY—Identify by IEN - 233 if you write the maker

## DRIVE . . Disc chain sprocket mounts on interchangeable split hubs

Source: CULLMAN WHEEL CO.
1342-46 Altgeld St., Chicago 14, Ill.



**Grip Master** trade names new line of solid disc sprockets for six sizes of roller chain from No. 40 to No. 100 to mount on split hubs that are carried in stock in a range of bores. The sprockets carry bores from 2⅞ to 4¼ in., each chain size having one bore diameter for all discs in that size.

**The hubs** are available in three flange diameters from 3½ to 4¾ in. and with bores ranging in $\frac{1}{16}$-in. increments. Smallest unit ranges from ⅛ to 1$\frac{11}{16}$ inches. The largest measures 1 to 2$\frac{7}{16}$ inches. All hub sizes are in stock, keywayed, setscrewed and packaged with bushings and assembly screws. The material is steel. Sprockets for No. 40 chain are available with 32 to 84 teeth. Those for No. 100 chain carry 18 to 48 teeth. All sizes are shown in a new 4-page bulletin.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90*

BREVITY—Identify by IEN - 234 if you write the maker


*Trucks that Save Labor!*

SABIN One-Man TRUCKS

RIGHT WEIGHT FOR EASY HANDLING

RIGHT QUALITY FOR LONG SERVICE

BARREL, DRUM AND KEG TRUCKS; BOX TRUCKS; PACKAGE TRUCKS; COIL TRUCKS; SHOP TRUCKS; TOTE PAN TRUCKS; Special Trucks.

Sabin trucks are used extensively in numerous industries and most of our sales come from repeat orders from satisfied customers.

See our complete line—WRITE FOR BULLETIN NO. 48.

BARREL TRUCK. One man easily handles drum and barrel loads weighing up to 800 pounds.

The Sabin Machine Co.
6540 Carnegie Avenue
CLEVELAND 3, OHIO


BREVITY—Identify by IEN - 235 if you write the maker


The All-Metal RAMSEY FLEXIBLE COUPLING

SIMPLE
STURDY
COMPACT
MADE IN 11 SIZES

Exclusive design provides the flexibility in this all-metal coupling. Can be applied or removed in a matter of minutes. Aluminum Covers available. Prompt shipments from stock. For dimensions, capacities, prices, etc.

WRITE TODAY FOR "THE COUPLING BULLETIN".

SILENT CHAIN DRIVES – FLEXIBLE COUPLINGS SINCE 1911

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.


BREVITY—Identify by IEN - 236 if you write the maker


THE DIRT DRIPS OFF

Leaves the work clean and dry when you suspend it in vapor inside a Phillips degreaser

*What work? How? Why? How big? Manual? Automatic?*

The answers are all in our new 48-page illustrated booklet, "Engineered Metal Cleaning Equipment", covering machines for both production and maintenance on parts from screws to railway motors.

*Write for your copy.*

PHILLIPS MANUFACTURING COMPANY
3471 Touhy Avenue Chicago 45, Ill.

BREVITY—Identify by IEN - 237 if you write the maker

NEW PERMANENT NON-SLIP

FIRM-GRIP Genuine NEOPRENE LATEX GLOVES

✔ Permanent NON-SLIP on all 5 Fingers and Palm
Highly efficient embossed surface is *integral part* of glove
✔ Impregnable to ACIDS, CAUSTICS, OILS
✔ Curved FINGERS for Comfort and Easy Use

No. 5740-S LONG GAUNTLET
Length 14", Gauge .030 to .040
Sizes 9, 10, 10½, 11, 12
No. 5720-S LIGHT DUTY
Length 10½", Gauge .017 to .020
Sizes 7, 7½, 8, 8½, 9, 9½, 10, 11
★ Write for sample and prices

SEIBERLING LATEX PRODUCTS CO.
AKRON 1, OHIO

200-5th Ave., New York
Merchandise Mart, Chicago

BREVITY—Identify by IEN - 238 if you write the maker

BOOST OUTPUT with *Impact* AIR HAMMER

the efficient modern method for

PUNCHING ..... RIVETING
ASSEMBLING ... EMBOSSING
FORGING ..... FORMING
PEENING ..... MARKING
CRIMPING ..... CUTTING
BLANKING ..... COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES save precious man-hours!

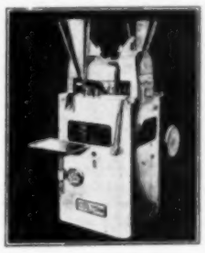
CATALOG READY
Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 NORTH KNOX AVENUE
DEPT. EA-11 • CHICAGO 41, ILL.

BREVITY—Identify by IEN - 240 if you write the maker

PRESS . . Rotary tablet machine, multiple punch design for fast action

Source: ARTHUR COLTON CO.
3402 E. Lafayette Ave., Detroit 7, Mich.



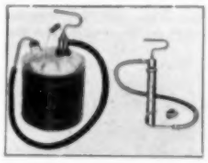
No. 227 designates new double rotary press rating 1,575 completed tablets per min. in maximum diameter at ½ in. and from maximum cell depth of ¾ inch. The press mounts 27 punches and dies and two stamping stations. Maximum pressure is 2½ ton. Drive is by a 2-hp. motor with a variable-speed transmission, Twin-Disc clutch, ball-bearing countershaft, and worm-and-gear connection assembled in a sealed housing so the gears can operate in oil. Material feeds from hoppers to over-fill the dies which are then leveled off to desired cell depth. An excess-pressure release protects the operating parts.

No. 233 is a companion machine differing only in its assembly of 33 punches and dies and its maximum tablet diameter of $\frac{7}{16}$ inch. It rates 1,930 tablets per minute. Both machines measure 50 by 32 by 66 inches and weigh 2,175 pounds.

BREVITY—Identify by IEN - 241 if you write the maker

DISPENSING . . Hand operated pump to deliver fluids from a container

Source: STELLO PRODUCTS CORP.
702-6 S. Main, Hutchinson, Kansas



Oils, fluid greases, fuel oil, alcohol, solvents, coolants can be delivered in measured amounts from original containers of the kerosene type by this new dispensing pump, 4-ft. oil-resistant hose and ½-in. hook-type aluminum nozzle.

The pump is fitted with a screw cap to turn into place on a 2½-in. filler opening on the container. Four strokes will deliver a quart or two pounds of liquid. Oyl-Monkee K-5 is the designation.

BREVITY—Identify by IEN - 242 if you write the maker

PLATING . . Rubber covered basket to use up scrap pieces of nickel anodes

Source: AUTOMOTIVE RUBBER CO.
8603 Epworth Blvd., Detroit 4, Mich.

New line of rubber-covered expanded-metal anode baskets employ ¼-in. wire frames and supporting hooks made of ¼ by 1-in. steel welded to a ⅛ by 1 in. steel strap extending down the sides and under the bottom. All surfaces are sealed in semi-hard rubber ⅛ in. in thickness and compounded to withstand contact with sharp anode edges.

Sizes are subject to specification to fit in given tanks. Normal top opening is 2 to 6 in. in width, 12 to 30 in. in length. Depth should be 2 in. greater than length of the anodes in use. Each basket is fitted with a duck filter bag.

BREVITY—Identify by IEN - 243 if you write the maker

MICROSCOPE . . Electron instrument magnifies direct to 6,000 diameters

Source: RADIO CORP. OF AMERICA
1941 Frost & Cooper Sts., Camden, N. J.

New Table Model of the company's electron microscope measures 30 in. in height, employs permanent-magnet lenses that require no stabilizing circuits and will provide useful magnification by photographic enlargement to 50,000 diameters. List price of the new assembly is about $6,000 or roughly one-third the price of the original universal model.

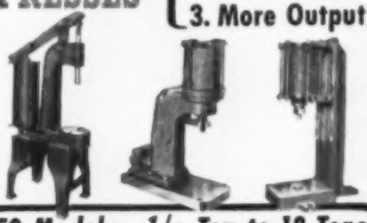
The lower end of the magnification range overlaps that of the conventional optical microscope. Simplicity of operation suits the instrument for use by inexperienced workers after an hour or so of instruction. Specimens can be inserted into the evacuated column or removed without breaking the vacuum. Photographic plates can be changed with admission of only a small amount of air so pumping between plates requires about 90 sec. to produce the required vacuum.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 244 if you write the maker

HANNIFIN AIR PRESSES

1. Minimum Investment!
2. Less Effort!
3. More Output!



59 Models—½ Ton to 18 Tons

FOR fast, efficient, low cost production with a minimum investment in equipment, Hannifin Air Operated Presses can't be beat for countless pressing, broaching, molding, staking, marking, bending, punching, forming, oil grooving, riveting, keyway cutting, and assembly operations.

HIGH SPEED, EFFICIENT—Effortless speed through new instant-acting valves. Use ordinary shop air supply.

EVERY WORK CONVENIENCE—Finest Hannifin engineering and construction. Send for descriptive bulletins. HANNIFIN CORPORATION, 1107 So. Kilbourn Ave., Chicago 24, Illinois.

HANNIFIN *Air Operated Presses*

BREVITY—Identify by IEN - 245 if you write the maker

IDEAL "Hand-Type" CLEANER

SUPER POWER • VALUE PERFORMANCE

1-1/3 HP motor—Weighs only 14½ lbs. Also 1/2 and 2/3 HP models

BLOWS
concentrated blast of dry air at 300 *miles* per hour. Blows grit, dust and lint from hard-to-get-at places. Evaporates moisture.

VACUUMS
dirt, metal, lint and wood particles, bench litter, etc.

SPRAYS
paint, varnish, lacquer, insecticides and deodorants.

Does a Better Job—on Any Job!

TRY IT Free!

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

IDEAL INDUSTRIES, Inc.
1188 Park Avenue, Sycamore, Illinois
Give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner in our plant.
Name
Company
Address
City Zone State

BREVITY—Identify by IEN - 246 if you write the maker

PYLE-NATIONAL INDUSTRIAL LIGHTING FIXTURES

*for safety* IN HAZARDOUS LOCATIONS

EXPLOSION PROOF

Pyle-National LE Series: Class I, Groups C and D

For use in locations where highly flammable materials are manufactured or handled.

Rugged, flame-tight cast aluminum alloy housings render internal explosions harmless, and insure safe operating temperatures. Threaded construction permits easy access to interior for wiring and lamp replacement. Available in many types and sizes.

DUST-TIGHT

Pyle-National DE Series: Class II, Groups, E, F and G

For use in locations where flammable dusts are present in quantity.

Strong, one-piece cast aluminum alloy housings are designed to exclude dust from the interior and to avoid accumulation of dust on the exterior surface. Available in many types and sizes.

Consult the new PYLET Catalog for complete line of explosion-proof supporting PYLETS for lighting fixture mounting.

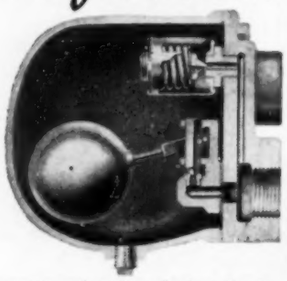
THE PYLE-NATIONAL COMPANY
1348 NORTH KOSTNER AVENUE CHICAGO 51, ILLINOIS
*District Offices and Representatives in Principal Cities of the United States.*

PLUGS AND RECEPTACLES • FLOODLIGHTS • CONDUIT FITTINGS

BREVITY—Identify by IEN - 247 if you write the maker

# REMOVES CONDENSATE *as fast as formed...*

SARCO FLOAT THERMO-STATIC STEAM TRAPS



Discharges condensate continuously without shock to disturb temperature controls. Keeps unit heaters, hot water generators and steam lines fully operative at all times. Note the automatic by-pass for air. Air binding is impossible. The FT is tops for continuous food and chemical processes and low, medium and high pressure heating systems. Catalog No. 450.

247

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

BREVITY—Identify by IEN - 248 if you write the maker

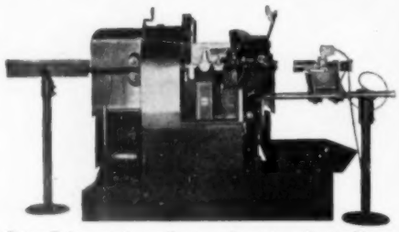
THE *Multiple-Purpose* FLOOR-MAINTENANCE MACHINE THAT'S *Two Sizes in One!*

Here is a machine that not only can be used to scrub, apply wax, polish, steel-wool, scrub rugs, and disc-sand, but also affords the further economy of a machine that is two sizes in one. This *100 Series Finnell*, in one of the larger sizes as shown above at left, can be reduced to the small size unit shown in circle. Note the low, trailer-type construction of the machine, and how easily it goes beneath furnishings. Three sizes: 13, 15, and 18-inch brush diameter. For consultation, demonstration, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 8601 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
*Pioneers and Specialists in*
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 249 if you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine—*any length you want*. FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

**½" Tubing** — Cuts and Chamfers both outside edges of ½" .030 wall tubing, 8" lengths, every 2.8 seconds.

**1¼" Cold Rolled** — Cuts and Chamfers both ends. 20" long, at rate of 1 every 20 seconds.

**1" Tubing** — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

**4" THREADED STUDS**

Modern Automatic Cutting-Off Machines available in 2 sizes, handling work up to 3" O.D.

WRITE for CATALOG

Cut and chamfered at one time—in 8 seconds—from 10 ft. length of stock already threaded (¾" U. S. Standard.) Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

BREVITY—Identify by IEN - 250 if you write the maker

## FEEDING . . Metering pump to measure out hot waxes and cements

Source: EDWARD E. ROBINSON CO.
93-97 Park Ave., Nutley 10, N. J.

**Sealing wax** is delivered in variable measured amount to seal electrical switch parts, bonding compound is measured into capacitor cases, sealing compound is fed into selenium rectifiers by application of this new design in the company's metering pump previously described IEN-7772-48. The machine is available in three variable stroke capacities, the smallest ranging from .0154 to .2464 fluid ounces per stroke in 16 adjustment increments. The largest will deliver .25 to 12.5 fluid ounces per stroke in a range of 50 adjustment increments. Temperature is to 450 deg. F.

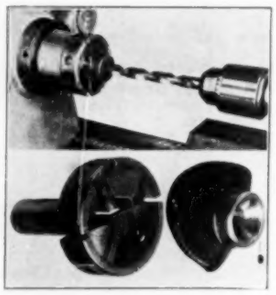
**The new design** mounts a bronze materials tank holding 1½ gallon of material. The tank is insulated and fitted with heating elements and thermostat control for any material that must be heated to flow. The material moves down through a throat leading to a small gear pump which acts as a seal when it is not moving. At the rear is a small motor with worm and gear connection to a ratchet providing for adjustable intermittent rotation of the pump in delivery direction. Operation is controlled at a clutch lever which is depressed to produce one cycle of movement. A counter records these movements. Delivery is through a nozzle of suitable shape and size for a given application.

**Delivery** amount is set on a graduated index sector by a spring-loaded pin that engages a cam. An automatic timing device can be added. Heating elements are located at the pump and also at the nozzle to insure clean flow. Non-dripping cutoff is provided for by check design at the nozzle. The machine mounts on a bench.

BREVITY—Identify by IEN - 251 if you write the maker

## CHUCK . . Spring type design centers and holds work for machining

Source: SELF CENTERING SPRING CHUCK CO.
38-42 Summerfield Ave., Bridgeport 8, Conn.



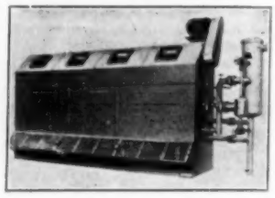
**Capacities** range from ½ to 8 in. in work diameter in this new line of self-centering spring chucks. The unit consists of a ring of shouldered jaws forming a cup integral with the chuck shank which applies in a lathe spindle. The user makes and secures replaceable metal pads within the cup to locate a work piece of given irregular contour. Work is entered and removed by finger pressure. No other clamping is required.

**List price** is about $60 to $308 for the chuck and a set each of round and square locating pads. The chuck is made of oil-hardening steel, heat treated and stress relieved.

BREVITY—Identify by IEN - 252 if you write the maker

## REFRIGERATING . . Cold storage unit cools and circulates air, to 25,000 cfm.

Source: YORK CORP.
444 Roosevelt Ave., York, Pa.



**Type IDV** designates six new models in the company's line of Industrial Dry-Coil Vertical Air Conditioners to cool and circulate air in refrigerated storages and cold-processing departments. Each includes a refrigerant coil in finned galvanized design for connection to a suitable refrigerant compressor, an assembly of centrifugal blowers and a galvanized steel housing. Spray nozzles are provided on a defrosting header above the coil and an 8-in. drain pan is made a part of the housing. An external high or low-pressure float controls the flow of refrigerant. A low-pressure receiver can be specified.

**Gasketed doors** and access plates provide entry to the equipment for inspection and maintenance. The blower shaft rides in self-aligning pillow-block bearings with graphite-bronze bushings reservoir lubricated. Variable-pitch sheaves provide for speed adjustment in drives to 3 hp. Overall dimensions are about 51 to 186 in. in width, 31 to 40 in. in depth, 82 to 101 in. in height.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 253 if you write the maker

## Weigh, Assemble and Seal with this New Scale Heat Seal Unit...

Here is the new EXACT WEIGHT Scale and Heat Seal unit for modern packaging. Cuts packaging costs by weighing, assembling and sealing in one simple straight line operation which eliminates all extra handling. Increases package production . . . cuts labor costs . . . saves in overweight . . . turns out clean, tight packages at equipment cost far less than complicated, expensive automatic units. Write for full details at the address below.

EXACT WEIGHT SCALES
*Industrial Precision*
THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 254 if you write the maker

cut costs · clean efficiently

# cold steam

*widely used in these industries:*
Air Craft
Automotive
Bakeries
Breweries
Cement
Ceramics
Cheese
Construction
Distilling
Electrical
Food Processing
Foundries
Jewelry
Leather
Meat Packing
Machine Shops
Marine
Mining Equipment
Oil & Refinery
Optical
Paper
Pharmaceutical
Public Utilities
Repair Services
Railroad
Rubber
Ship Building
Stone Polishing
Textile
Tobacco
Transportation

✓no back splash
✓blasts stubborn dirt
✓harmless to finest finish

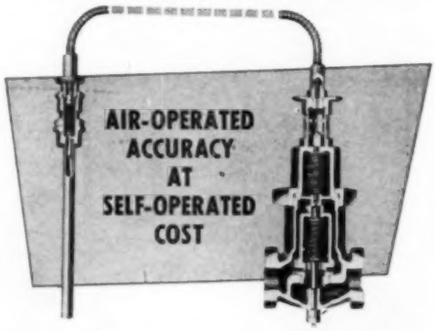
HYDRO-AIR PRESSURE WASHER $9.95

Connects to regular air and hot or cold water supply. Precise control of air and water blasts heavy dirt and grease or rinses sheets and small parts with a penetrating spray.

D & M Products, Inc., 26 N. Raymond Ave., Pasadena 1, Calif.

*Order through your supplier or direct. The Hydro-Air washer will be sent post paid.*

BREVITY—Identify by IEN - 255 if you write the maker



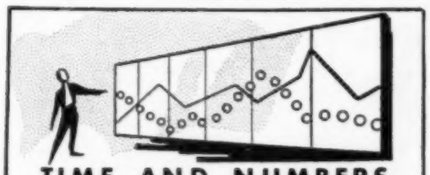

Self-operated Farris **Stacon Temperature Regulators*** make possible unheard-of control accuracy—**to within plus or minus 1 deg.** How? Because liquid in the bulb flashes to vapor in power bellows. Steam does 99 per cent of the work . . . instantly. Balancing bellows eliminates spring counterpoise and packing glands . . . prevents response to variations in steam temperatures . . . provides free-floating valve disc.

Compact, trouble-free, dirt-proof, hermetically sealed Stacon Regulators operate consistently in the worst possible surroundings—require no maintenance. To learn more about the most sensitive, accurate, economical temperature regulator available, write for Stacon Bulletin 50-1000.

6690 *Patented

**Farris Stacon Corp.**
432 COMMERCIAL AVE. • PALISADES PARK, N. J.

BREVITY—Identify by IEN - 256 If you write the maker



TIME AND NUMBERS

Do you need a permanent record of specific times and numbers that apply to your laboratory or production work? Streeter-Amet has the instrument which will accurately and speedily record either numbers or time or both at the same time on paper tape for easy readability.

The counter operates by any means capable of supplying a switch closure or an electrical impulse. Counts may be indexed by time or number printed alongside the count.

For high speed counting of a predetermined number of completed articles, the Streeter-Amet Predetermined Counter automatically counts and then shuts off or controls associated machinery when the predetermined number is reached. An outstanding timesaver when packing a given number of small articles in a carton or bottle and measuring lengths of wire or sheets in a bundle.

Tell us your specific outstanding problem. We know we can help you economically.

Write for illustrated circular SC 12.

FOUNDED 1888

SCALES · WEIGHT RECORDERS · HI-SPEED COUNTERS

STREETER - AMET COMPANY

4101 N. RAVENSWOOD AVE. CHICAGO 13, ILL.

BREVITY—Identify by IEN - 257 If you write the maker

More than

5,000,000

4 CYCLE BRIGGS & STRATTON GASOLINE ENGINES

The performance record of more than five million Briggs & Stratton single-cylinder, 4-cycle, air-cooled engines speaks for itself.

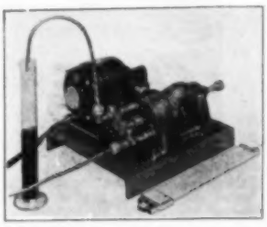
BRIGGS & STRATTON CORP., Milwaukee 1, Wis., U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

BREVITY—Identify by IEN - 259 If you write the maker

## FEEDING . . Miniature metering pump, 3 to 800 cc. per hr. against 1,000 lb.

Source: MILTON ROY CO.
1303 E. Mermaid Lane, Philadelphia 18, Pa.



New miniPump is a miniature design of the company's double ball-check pump with cam operated ⅛-in. plunger and adjustment in the driving end to set a desired delivery by regulating the plunger stroke. The pump is available in single, duplex and multiplex assemblies for motor drive. It also is made with a double-acting air cylinder as the driving means. Services include regulated feed of clear liquids including corrosive chemicals.

**The liquid end** and the plunger are made of Carpenter stainless No. 20 steel. The ball checks are No. 440 stainless, glass or synthetic sapphire to specification. Check diameter is $\frac{3}{16}$ inch. Plug-fitted openings permit cleanout of any foreign matter.

**The motor-drive** power end is equipped with oil-impregnated bearings and encloses the operating cam in a housing that can be filled to a gage level with lubricating oil. List price of the single unit with Teflon packing and stainless-steel check balls is $224. The company is prepared to advice on application.

BREVITY—Identify by IEN - 260 If you write the maker

## PROTECTING . . Fabric glove is impregnated with flexible plastic

Source: AMERICAN RUBBERIZING CO.
615-19 11th Ave. S., Minneapolis 4, Minn.

Plastiglov trade names new line of work gloves in which a fabric unit with knit wrist is impregnated with a flexible plastic material. The finished unit is flame and heat resistant. It has excellent tear strength, is suitable for use in contact with acids, alkalis. It stands up in abrasive service. Packaging is in a dozen pair per box. Colors are available for the new glove.

BREVITY—Identify by IEN - 261 If you write the maker

## SPRAYING . . Motor driven unit to spray company's liquid insecticide

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

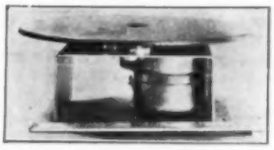
Mistorizer trade names new portable sprayer with a universal 1/10-hp. motor drive to fog or contact-spray the company's insecticide known as Vaposector. An ounce of this liquid will control flying insects in 1,000 cu. ft. of space. Two ounces will control crawling insects in the same space within a building.

**The liquid** is quick-acting, will not contaminate or stain. There is no explosion hazard or after-odor and no danger of corrosion. The spray unit holds 25 oz. of the liquid, dispenses 1 oz. in fogging or 1½ oz. in contact spraying per minute.

BREVITY—Identify by IEN - 262 If you write the maker

## TURNTABLE . . For display uses, motor drives in variable reversing arc

Source: GALE DOROTHEA MECHANISMS
37-69 85th St., Jackson Heights, N. Y.



Movement through any of 35 reversing arcs between 4 and 357 deg. is selected by setting pins in the base beneath the 6-in. Masonite top in this new turntable. The unit is driven by a 4-rpm. synchronous motor for operation on 110-volt ac. Upon contacting one of the stop pins the rotating movement of the table reverses until the other pin is contacted. The movement continues as long as the circuit remains closed.

**The table** will take loads to 1 pound. Overall height is 2¾ inches. Four-page Bulletin, "How to obtain eye-catching back and forth motion" presents illustrated description and examples of many display uses.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 263 If you write the maker

MERCURY "A-310" INDUSTRIAL TRAILER

Standard Type "A-310" Trailer

Type "A-310" with Box Body

Type "A-310" with Dump Body

OVER 250,000 NOW IN USE

Over 250,000 Type "A-310" trailers now performing a variety of plant transportation jobs—attest the wide popularity of this versatile unit.

Standardized in every essential that assures long life, low cost, user satisfaction, the "A-310" incorporates the following features: heavy steel frame; ball bearing casters; rubber-tired, roller-bearing wheels; heavy axle and brackets.

While standardized in detail, "A-310" flexibility in design permits wide variation in construction and size to meet your particular requirements.

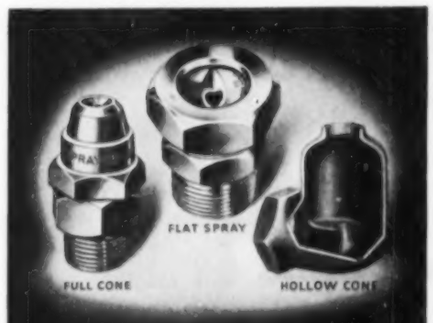
Submit blueprints on your trailer requirements for Mercury quotation. Or, if you prefer, request Bulletin A-100.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted St.
Chicago 9, Ill.

MERCURY

TRACTORS • TRAILERS • LIFT TRUCKS

BREVITY—Identify by IEN - 264 If you write the maker




SPRACO NOZZLES

Write for NOZZLE CATALOG to

SPRAY ENGINEERING CO.

110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 265 If you write the maker

No. 1 Source FOR HEAVY-DUTY Air-Cooled ENGINES

4-cycle Single Cyl. 3 to 9 hp.

4-cycle 2-Cyl. 7 to 13 hp.

V-type 4-Cyl. 15 to 30 hp.

As a potential or present user of internal combustion engines, you will readily recognize the advantages of dealing with an outstanding leader in this field.

Because constant engineering effort and manufacturing skill are applied entirely to the improvement and large volume production of WISCONSIN HEAVY-DUTY AIR-COOLED ENGINES, in a complete, all-purpose power range, you have the best assurance not only of dependable power units ideally suited to your power applications but, of equal importance . . . you have, here, the world's most dependable source of supply both for engines and original factory parts.

Supporting this endeavor are key distributors of impressive recognition in the territories they serve, and a staff of competent Wisconsin Motor Corporation field men, in close liaison between factory and customer. Your best interests are our primary interest.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy Duty Air-Cooled Engines

BREVITY—Identify by IEN - 266 If you write the maker

Nicholson Makes

**FREEZE-PROOF Steam Traps**

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air-binding feature of Nicholson traps also notably facilitates steam transfer in severe weather. Sizes ¼" to 2"; press. to 225 lbs. BULLETIN 450.

**W. H. NICHOLSON & CO.** 169 Oregon St. Wilkes-Barre, Pa.

Valves • Traps • Steam Specialties

BREVITY—Identify by IEN - 267 If you write the maker

Reported by Users of

**STANDARD PNEUMATIC TUBE SYSTEMS**

**Safe — swift delivery by "AIR" of messages . . . money . . . merchandise!**

Savings as high as $10,000 in 9 months' time are reported by users of Standard Pneumatic Tube Systems — filling orders, moving merchandise, money, messages, records, between departments. Reduce messenger and telephone service. Can be installed for a wide range of needs in stores, warehouses, manufacturing plants, offices. Write for Bulletin No. 11 and complete information — address Dept. IEN-11.

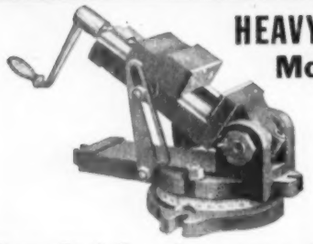
**STANDARD CONVEYOR CO.** North St. Paul 9, Minn.

Write for Bulletin No. 11 — Standard Pneumatic Tube Systems. Address Dept. IEN-11

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 268 If you write the maker

**PALMGREN ANGLE VISES**



**HEAVY-DUTY Model**

**For Quick — Accurate Set-ups**

PALMGREN Heavy Duty Angle Vises are built sturdy and rugged for tough, heavy jobs. They are accurately graduated in degrees, can be quickly adjusted to any angle, stay locked under severe service and save valuable hours otherwise wasted in tedious make-ready, wedging or making temporary jigs and fixtures.

Jaws are hardened and ground. Special outstanding features are the size and opening of jaws—4" Jaws open full 4", the 6" Jaws open full 6" etc., with corresponding depth of Jaws. Vise can be used as ordinary vise when lowered to horizontal position. Swivel bases furnished if desired. Sizes 4", 6" and 8" Jaws and openings. Prompt deliveries.

ORDER TODAY Be sure of IMMEDIATE DELIVERIES

Write for bulletin on complete line of PALMGREN Vises

**CHICAGO TOOL & ENGINEERING CO.**

Mfrs. of PALMGREN PRODUCTS for over 25 years

8406 SOUTH CHICAGO AVENUE • • • CHICAGO

PRECISION WORK AT ANY ANGLE

# NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, side films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 269 If you write the maker

**BEARINGS . . For use in instruments the subject of bulletin on selection and assembly**

Fafnir Bearing Co
35-39 Booth St., New Britain, Conn.

**"Ball Bearings for Instruments"** titles new 20-page bulletin that describes material requirements, assembly practice, lubrication. It tabulates dimensions and specifications, includes a nomograph chart of load rating vs. speed for these bearings.

BREVITY—Identify by IEN - 270 If you write the maker

**BELLOWS . . Technical article reprint on factors in selection of a metallic bellows**

Clifford Mfg. Co.
146 Grove St., Waltham 54, Mass.

**Six points** are described in detail by new 8-page reprint bulletin, "What to Consider When Selecting a Metallic Bellows", written by two of the company's engineers. These include construction, materials, flexibility, filling medium, life.

BREVITY—Identify by IEN - 271 If you write the maker

**CALENDAR . . Offered on request, contains details on company's sewing machines**

Union Special Machine Co.
443-47 N. Franklin St., Chicago 10, Ill.

**Alternate pages** in the company's 1951 calendar present application information on its machines for sewing fabrics, leather, felt. Included are four pages of stitch drawings and seam specifications. Size is 11 by 17 inches.

BREVITY—Identify by IEN - 272 If you write the maker

**GRINDING . . Sharpening instructions for carbide milling cutters in revised booklet**

Cincinnati Milling & Grinding Machines Inc.
Marburg & Kline Sts., Cincinnati 9, Ohio

**Importance** of proper sharpening of carbide milling cutters, based on the company's own experience, is stressed in 16-page Booklet M-1714, recently revised. The booklet lists equipment required, general rules for procedure, diamond wheels and dressing. It illustrates and describes milling cutter elements, clearance angles. Procedures is detailed for a specific example.

BREVITY—Identify by IEN - 273 If you write the maker

**LATHES . . Steps in making them illustrated in company's house publication**

Warner & Swasey Co.
5703 Carnegie Ave., Cleveland 3, Ohio

**"Blue Chips"** Vol. 4, No. 8 is a pictorial explanation of how things are done in the company's plant with the idea that you may find a suggestion or two to use in your own shop. Descriptions cover machining of castings, small-lot operation, close-limit work, inspection control, automatic machines for small-lot production, control of cutting tools. How men and machines work together as a production team is shown with a typical tool layout sheet. Your name will be added to receive the publication upon request.

BREVITY—Identify by IEN - 274 If you write the maker

**LUBRICATING . . Useful information in two booklets on lubrication fundamentals**

Socony-Vacuum Oil Co.
26 Broadway, 10th Floor, New York 4, N. Y.

**Two new booklets** of 8 pages each are offered by the company with the title of "Fundamentals of Correct Lubrication". **The first** describes basic principles on how to select grease lubricants for plain bearings. It covers such points as why lubrication is required, boundary lubrication, effect of load, contaminants, speed, temperatures, application.

**The second booklet** concerns oil lubrication for plain bearings. It contrasts action of boundary lubrication and flood lubrication, emphasizes qualities of an oil required for both such as adhesiveness, lubricity, film strength, body.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56*

BREVITY—Identify by IEN - 275 If you write the maker

**Progress MEANS SAVINGS FOR YOU**

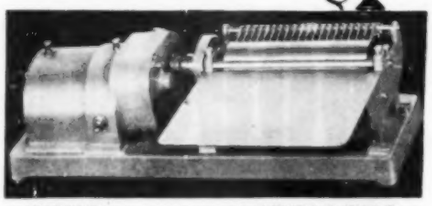
Back in 1938, the President of our Company packed his invention (The International Retractable Anvil Staple Machine), in a trailer, and "beat a path" to the doors of potential users. After watching their *filled* cartons being Stapled *from the outside, tops and bottoms simultaneously*, it didn't take them long to interpret the savings that this new miracle machine could effect—in time, labor, space and prestige.

Well, sir, today you'll find International Retractable Anvil Staple Machines being used in virtually every industry in the land. If you haven't looked into 'them yourself, you're missing a bet—and also losing money!

**INTERNATIONAL STAPLE AND MACHINE COMPANY**
**HAVERTOWN 5, PA.**
DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 276 If you write the maker

**NEED A GOOD GUMMER?**



**KING Direct Drive LABELLERS**

Direct drive eliminates trouble, permits compact, portable, easy to clean construction. King Label Gummers are rugged, indestructible—many in use for over 15 years. Models for any labelling need—all over or marginal, for any sized label.

Write for free catalogue.

**king SALES AND ENGINEERING COMPANY**
204 FIRST STREET • SAN FRANCISCO 5, CALIFORNIA

BREVITY—Identify by IEN - 277 If you write the maker

**BORIUM NOZZLES**

**for every Blast Cleaning Requirement**

Besides standard types and sizes carried in stock, BORIUM NOZZLES are custom made to meet special requirements. Typical Borium liner variations are illustrated. Maximum size limitations are 3" x 1½" O.D. If your nozzles are losing original orifice dimensions or rapidly cutting out, try BORIUM NOZZLES . . . Lined with pure Tungsten Carbide centrifugally cast to shape, they assure hundreds of hours of wear-resistant operation with faster cleaning, less air consumption and improved patterns! Quotations submitted upon receipt of blueprint. *Write for circular showing many style possibilities.*

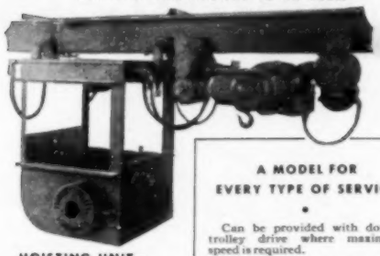
BORIUM INSERTS are surrounded by a mild steel shell to absorb shock. The super-hard insert prevents rapid cut-outs, multiplies life and prolongs original efficiency.

**STOODY COMPANY**
11930 EAST SLAUSON AVENUE
WHITTIER, CALIFORNIA

BREVITY—Identify by IEN - 278 If you write the maker

# For "Long Haul" Economy

CAPACITY 500 POUNDS TO 20 TONS



HOISTING UNIT—
Single or multiple-speed control, with positive load brake. Balanced drive distributes stresses evenly. Oil bath lubrication assures long, trouble-free life. Sealed housing keeps out abrasive dust and moisture. Anti-friction bearings throughout.

*Recommended for most economical operation over long runways.*

A MODEL FOR EVERY TYPE OF SERVICE

Can be provided with double trolley drive where maximum speed is required.

Furnished for cycle operation when specified.

Hoist mounted crosswise to runway for close clearance work if desired.

Operator's cab either open or completely enclosed and weatherproofed.

Existing floor-operated hoists easily converted by addition of Trailer Cab in which controllers are mounted.

*Write for Bulletin 177—"Aerial Railways of Industry"*

**Shepard Niles** CRANE & HOIST CORPORATION

456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

BREVITY—Identify by IEN - 279 If you write the maker

THERE'S NO BETTER WAY TO PACKAGE DELICATE OR PRECISION PARTS than in *Clearsite* PLASTIC SELLING CONTAINERS

Drills and tools, industrial jewels, taps and dies, screws, springs, nozzles, valves, fine machine parts, fishing tackle, electrical parts, and many, many others can be packaged for perfect visibility and the utmost in protection in the container that's featherlight (¼ the weight of glass) • shatterproof • flexible or rigid • permanently printed • clear or opaque in all colors • eventually a re-use container.

***Write for your FREE copy of the new, fully illustrated brochure that points up the many uses and advantages of Clearsite Plastic SELLING Containers.***

*CLEARSITE is made only by*

**CELLUPLASTIC** CORPORATION

**32 Avenue L • Newark 5, New Jersey**

*America's #1 Source for Plastic Containers*
*Established 1919*

Milwaukee • Los Angeles • Detroit • New Haven • Cleveland • Denver • Minneapolis • Cincinnati • Atlanta • Houston • Chicago • Jacksonville • Ft. Worth • St. Louis • San Francisco • Jackson • Richmond • Phoenix • Seattle • Portland • Louisville • Montreal • Toronto

## NEWS NOTES—Continued

*"Design suggestions on welded parts"*

BREVITY—Identify by IEN - 281 If you write the maker

**MANAGEMENT . . Useful information on how to work an employee suggestion system**

Personnel Materials Co.
201-3 N. Wells St., Chicago 6, Ill.

**Simplicity** in treatment is stressed in new 24-page booklet, "A Simple Way to Have a Successful Employee Suggestion System." Topics include why have a suggestion system, first steps, promoting the system, forms and records, handling the suggestions, rejections. The book is intended for small plants.

BREVITY—Identify by IEN - 282 If you write the maker

**PACKAGING . . How one company handles packaging and shipping operations told in booklet**

American Management Association
330 W. 42nd St., New York 18, N. Y.

**Drawings and text** describe methods of product packaging from clocks to X-ray equipment in new 64-page Booklet No. 33 in the Association's Packaging Series. Title is "How General Electric Tackles Its Packaging, Packing and Shipping Problems". List price is $1.25. Major topics include purchasing low-cost packaging materials, principles of package cushioning, case histories of packaging developments, new packaging solutions for economy and efficiency.

BREVITY—Identify by IEN - 283 If you write the maker

**PLASTICS . . Mechanical parts of nylon the subject of house publication**

E. I. duPont deNemours & Co.
9524-B Nemours Bldg., Wilmington 98, Del.

**Current issue** No. 47 of "Plastics Bulletin" describes a number of uses for nylon in mechanical parts such as gears, a connecting rod, bearings. These uses are grouped under automotive parts, textile equipment, household appliances. Specific properties suited to the application are emphasized.

BREVITY—Identify by IEN - 284 If you write the maker

**PLASTICS . . Machining suggestions for laminated plastics in new data bulletin**

Synthane Corp.
50 South River Road, Oaks, Pa.

**"Practical Methods of Machining"** titles new 6-page bulletin of the company's laminated plastics. Equipment selection, speeds and feeds are given for sawing, turning, threading, drilling, punching. There is a set of illustrated design suggestions and a table of characteristics and properties for 17 grades of material.

BREVITY—Identify by IEN - 285 If you write the maker

**PROCESSING . . Booklet describes methods of cooking canned food products in steam retorts**

Continental Can Co.
100 E. 42nd St., 25th Floor, New York 17, N. Y.

**Bulletin 19,** compiled by the company's Research Department, carries the title of "Retort Installation, Equipment and Operating Procedures". It tells how to calculate number of retorts, steam equipment required, handling equipment, operating methods. There are four pipe connection drawings.

BREVITY—Identify by IEN - 286 If you write the maker

**WELDING . . Design suggestions on welded parts in new instruction booklet**

Eutectic Welding Alloys Corp.
38-42 Worth St., New York 13, N. Y.

**First booklet** in the company's National Defense Series is its new 48-page "Manual of Welding Engineering and Design". The booklet presents information on welding methods and their advantages, design information on various types of joints, heat treating of welded parts.

**About half** the content is on the company's alloys in the form of tables which summarize properties, strength, joint preparation, preheating, heating methods for materials to use on cast iron, steels, stainless steel, copper alloys, nickel alloys, magnesium, aluminum, hard and machinable overlays. There also is a set of procedures recommended for thin-flowing, bead-forming, arc-welding alloy materials.

BREVITY—Identify by IEN - 287 If you write the maker

**WELDING . . Instruction booklet on how to weld with Heliarc torches**

Linde Air Products Co.
30 E. 42nd St., Room 308, New York 17, N. Y.

**Fundamentals** of Heliarc inert-gas-shielded arc welding for dc. and ac. current are set forth by text and drawings in revised 28-page Booklet F-6190. A sectional drawing accompanies details on equipment. Tables present welding data on aluminum, magnesium, stainless steel, copper, steel, cast iron.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 288 If you write the maker

**FREE— A GUIDE TO BETTER POLISHING and BUFFING RESULTS**

This new catalog, issued by Frederic B. Stevens, Inc., is now available to metal finishers. It is a 12-page booklet and describes the many Stevens job-tested compositions for buffing and polishing. In addition the catalog outlines Stevens' customer services which include operation of a pilot plant for analyzing buffing and polishing operating problems. The catalog also includes charts showing the recommended type of composition for all surfaces and every operation. Copies of the Stevens composition catalog may be obtained from Stevens or Udylite representatives or by writing direct to Frederic B. Stevens, Inc., Detroit 16, Michigan.

BREVITY—Identify by IEN - 289 If you write the maker

MODEL JA
50,000 R.P.M.
Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

**$42** IN U.S.A.

**THEY GRIND--NOT JUST RUB!**

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

**MADISON-KIPP CORP.**
**224 Waubesa St., Madison, Wis., U.S.A.**

**Write for KIPP Air Tool Catalog AT 3006**

BREVITY—Identify by IEN - 290 If you write the maker

FOR **BETTER TEMPERATURE CONTROL**

Here's just the regulator to use when a simple device is required to maintain a constant temperature. Controls liquids or air. Prevents losses of OVERheating. Saves fuel and labor. Users often report, "Economical, pays back its cost several times a year—gives years of reliable service". Variety of models. Will simplify your control problem.

WRITE FOR BULLETIN 329

THE POWERS REGULATOR CO.
2737 Greenview Ave., Chicago 14
New York • Los Angeles • Toronto
Offices in over 50 Cities • Established 1891

POWERS

**No. 11 REGULATOR** FOR Heat Exchangers • Vats • Dryers Jacket Water Cooling • Fuel and Crude Oil Heaters and Treaters Bottle, Can, Dish and Metal Parts Washers • Drying Rooms

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Carter

CUTS COSTS WAY DOWN!

CARTER RIGID WHEELS & TIRES

Carter rigid Wheels and 30" & 36" Quick-Change Tires are for heavy-duty high-speed operations. Tires won't throw even at 1800 r.p.m. Changed in 10 min. 20 years service on best machines. Carter products universally accepted as standard equipment by leading bandsaw manufacturers.

Write—

For free illustrated folder!

CARTER PRODUCTS COMPANY INC.

57 Mount Vernon, N. W. Grand Rapids 4, Mich


BREVITY—Identify by IEN - 292 If you write the maker


ANNOUNCING

Trumbull's new HCI switch

Trumbull's new HCI (*H*igh *C*apacity *I*nterrupter)—Type A Safety Switch has an extremely high momentary current capacity. It withstands heavy short circuits without damage. It was designed for use with modern high-capacity distribution systems.

More first-time features

"Circuit breaker" interrupting action breaks heavy loads quickly and safely . . . Center-front operation permits close ganging . . . Front fusing allows compact box, yet gives ample wiring space . . . No exposed live parts when switch is OFF and door is open . . . Clear ON and OFF markings both inside and outside.

HCI switches are available in 30-, 60-, 100-ampere sizes . . . Underwriters' approval throughout. Write for copy of Bulletin TEC-10 today.

TRUMBULL (T) ELECTRIC

THE TRUMBULL ELECTRIC MANUFACTURING COMPANY
Plainville, Connecticut

TRUMBULL'S TRAINLOAD OF NEW PRODUCTS


BREVITY—Identify by IEN - 293 If you write the maker

Your EXTRA Advantages in specifying CLEVELAND Fasteners:

Extra high manufacturing standards,
Extra wide range of sizes,
Extra fast delivery.
. . . advantages that spring from

CLEVELAND'S SPECIALIZATION
in Cap Screws, Set Screws, Milled Studs

CLEVELAND Top Quality FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago, Philadelphia and New York
Ask your Jobber for Cleveland Fasteners


BREVITY—Identify by IEN - 294 If you write the maker

## CLEANING . . Pump equipped tank holds solvent for cold application

**Source: PHILLIPS MFG. CO.**
**3473-77 W. Touhy Ave., Chicago 45, Ill.**

**SolVoJet** is a new assembly of welded galvanized iron tank, expanded-metal work rest, work basket, motor-driven rotary pump, pipe, control valve and nozzle-equipped hose. The motor rates ¼ hp. and is fitted with a 12-ft. extension cord and plug. The tank is finished on the outside with a solvent-resistant paint and is mounted on casters. Inside dimensions are 36 by 18 by 16 inches. Overall height is 36 inches.

**Any suitable solvent** is filled into the tank below the work position and the work is introduced on the rest or in the basket. The valve is adjusted for a desired force of jet delivery and the pump motor is started by depressing a foot switch. The solvent washes foreign matter from the work which then is permitted to drain or is blown dry with compressed air.

BREVITY—Identify by IEN - 295 If you write the maker

## TRUCK . . Motor driven tractor in two ratings of 500 and 800 pounds

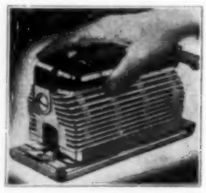
**Source: MARKET FORGE CO.**
**23-27 Garvey St., Everett 49, Mass.**

**Load-Mobile** is a new battery-powered tractor on which the operator rides in seated position facing forward or back toward the train, or on which he can stand. Steering is at the front wheel with drive at the back wheels. Travel is at 3½ to 4 mph. free and 2½ to 3 mph. loaded. Drawbar pull is 500 to 800 pounds. Overall length is 44 in. for the new tractor with width at 30 inches.

BREVITY—Identify by IEN - 296 If you write the maker

## SANDING . . Portable electric tool reciprocates at 14,400 strokes per min.

**Source: DREMEL MFG. CO.**
**2418-22 18th St., Racine, Wis.**



**Model 2000** is a new vibrator-operated portable sander for operation on 110/220-volt ac. The vibrator connects directly to the pad for $\frac{1}{16}$ in. of reciprocation that is essentially free from vibration. A stroke-adjusting screw is provided to compensate for variation in voltage. The two moving parts are not affected by dust. No lubrication is required for the new tool.

**The pad** is faced with ¼ in. of rubber and takes a 3 by 9-in. strip of abrasive paper or cloth. Clamps provide for quick application or change. The housing is made of aluminum with a molded-plastic hand grip top carrying a circuit switch. Overall dimensions are 3¼ by 7 by 4½ inches. Weight is 5 pounds. List price is $24.50 with a steel carrying case and 25 sheets of assorted abrasive paper and a sheepskin pad.

BREVITY—Identify by IEN - 297 If you write the maker

## WATER TREATING . . Demineralizer delivers equivalent of distilled water

**Source: LA MOTTE CHEMICAL PRODUCTS CO.**
**50 York Road, Towson 4, Md.**

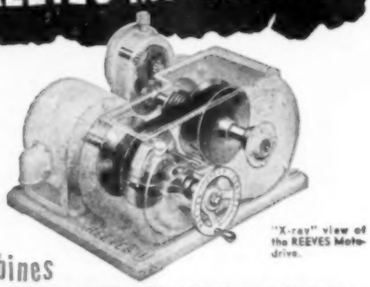
**Filtr-Ion** is a new ion-exchange unit for connection to a faucet for delivery of small amounts of demineralized water that is equivalent to distilled water. One unit will deliver 10 gallons. It then is refilled with fresh material which the company supplies on order. Packages of the material hold sufficient for two rechargings of the unit.

**The main tube** is made of transparent plastic. It measures 8½ by 1⅝ inches. The ion-exchange material is known as Amberlite. It is blue-black initially, turns to light yellow as it becomes exhausted. The treated water is passed through a small tube attached to the bottom of the main one for delivery to a suitable container.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 298 If you write the maker


REEVES MOTODRIVE



"X-ray" view of the REEVES Motodrive.

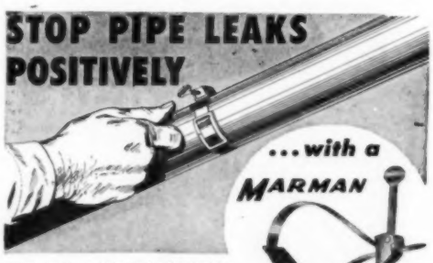
Combines MOTOR, VARIABLE SPEED MECHANISM AND GEAR REDUCER IN ONE COMPACT UNIT

You'll see vast improvement in the performance of your driven machines when REEVES Motodrive is on the job. In one space-saving assembly, REEVES gives you instant, accurate, infinite speed adjustability . . . the right speed for every operation and every operator, under every changing condition—*without stops or steps.* Machines do more work . . . more different jobs . . . turn out products of improved, uniform quality in greater quantity. So to get the most from your machines, investigate REEVES Motodrive—built by the recognized leader in the specialized field of speed control engineering. And for complete information on all REEVES Speed Control units, send for Catalog IN10a-3N.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA


BREVITY—Identify by IEN - 299 If you write the maker


STOP PIPE LEAKS POSITIVELY




Users tell us this is the best all-around pipe leak clamp made.

IT'S QUICK: One person can install a Patchmaster in 30 seconds—even in inaccessible locations because clamp is light and forms naturally to pipe contour.

AMAZINGLY STRONG: Made of flexible stainless steel for strength and corrosion resistance it withstands pressures up to 800 p.s.i.

PERMANENT: There's no need to make any further repairs—the Hycar pad and clamp is resistant to deterioration by water, gas, oil, etc.—whole unit will actually outlast the pipe.

HIGHLY ECONOMICAL: The Patchmaster is an inexpensive permanent repair or it can be used and reused, saving you money either way.

4 SIZES FOR ALL PIPE FROM ½ TO 4 INCHES

For information and literature on Marman's complete line of pipe leak clamps write Dept. I-1.

MARMAN PRODUCTS CO. INC.
940 W. FLORENCE AVE., INGLEWOOD, CALIF.


BREVITY—Identify by IEN - 300 If you write the maker


Elasticone Guide Pin Covers

"Automatic Protection for Man & Machine"

- Interchangeable
- Long Life
- Will not bend or dent
- Neat appearance
- Stock sizes
- Self Aligning
- Fits front or back pins
- Automatic height adjustment

JUST SNAP INTO PLACE

• No tools required • No installation cost • No maintenance cost • No holes to drill • No threads to tap • No moving parts

WHEN ORDERING PLEASE SPECIFY O.D. OF BUSHING & FULL OPEN HEIGHT OF SET

*Protects Pins & Bushings From Dirt & Scale*
*Prevents Injuries to Die Setters & Operators*
Protects Pins from Misplaced Work, Nicks or Scratches

CENTRAL SAFETY EQUIPMENT CO.

2204 E. Huntingdon Street Philadelphia 25, Pa.

BREVITY—Identify by IEN - 301 if you write the maker


# NOW...

Popular AO PANORAM GOGGLE

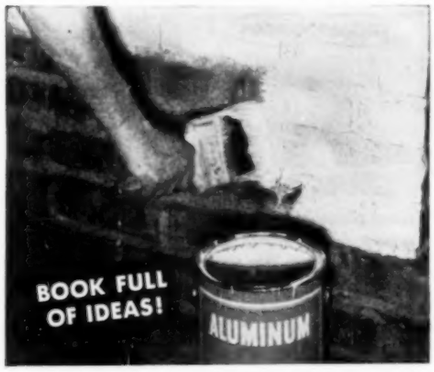
FOR SMALLER FACES

Workers with smaller features who want the finest in a plastic safety goggle can now get perfect fit and comfort with the AO "800" PANORAM. Has all advantages of the larger "600" Panoram which make the companion model so popular including quickly replaceable, shatterproof lenses that provide *unobstructed* and *undistorted* vision . . . forehead and face-conforming lightweight frame . . . ventilated eyecups . . . comfortable pressure-less bridge . . . new rubber headband. Clear or green frame and lenses. Protective vinyl case at slight extra cost. Your nearest AO Safety Products Representative can supply you.

American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES


BREVITY—Identify by IEN - 302 if you write the maker


# HOW TO BRIGHTEN DARK ROOMS WITH A SINGLE COAT*

HERE'S A NEW FREE BOOK that tells how! Gives pages of facts on the improved reflectivity, better quality of new aluminum paints now available. Alcoa does not make aluminum paint, but we have prepared this book to help you buy and apply it right.

If you've been buying paint without the information this book contains; if you've never used the superlative new aluminum paints it describes—your paint knowledge is out of date. New pigment and vehicle developments have revolutionized aluminum paint performance. This book tells how to get the best and apply it for greatest service. Includes coverage tables, facts on correct types of ready-mixed aluminum paints for metal, masonry, or wood surfaces, inside or out—and for heated surfaces.

This important buying and application information will be sent by return mail. Send coupon below.

ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1786A Gulf Bldg.,
Pittsburgh 19, Pennsylvania

Please send me free copy of *"painting with aluminum"*

Name (Please print) _____

Address _____

City _____ State _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.

*The RIGHT aluminum paint for this job is ALUMINUM METAL & MASONRY PAINT

ALCOA


BREVITY—Identify by IEN - 304 if you write the maker

## PACKAGING . . Vacuum sealing machine for packaged bacon, cheese, meat

**Source: STANDARD CAP & SEAL CORP.**
**405 Lexington Ave., 49th Flr., New York 17, N. Y.**

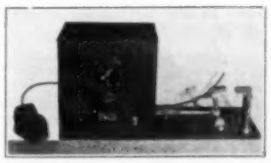
**Five radial heads** assembled on a horizontal shaft carry three, four or five slot-like compartments on their outer faces in this new Flex-Vac machine. Pre-filled heat-sealing packages of food products such as cheese, sliced meat, are placed in these compartments as each radial head approaches vertical position. The operator indexes the heads by stepping on a pedal to bring them one at a time vertically under the combination vacuum and heat-sealing head at the top of the machine.

**Air is exhausted** from the packages. Bellows on the side of each compartment are collapsed to press each package into sealing position. The flaps are sealed with the packages in this position and, as the head is rotated downward, they are discharged to a receiving bin. The machine has maximum capacity of 20 packages per minute.

BREVITY—Identify by IEN - 305 if you write the maker

## SOLDERING . . Resistance machine with solenoid operated heat electrodes

**Source: LUMA ELECTRIC EQUIPMENT CO.**
**P.O. Box 132-A, Toledo 1, Ohio**



**Soldering contacts** mounted at the front of this new machine are graphite blocks that can be shaped to fit given work. One block is held stationary. The other is assembled in a pivoted arm secured by horizontal connection to a solenoid in the housing which also encloses an adjustable-heat transformer. The assembly mounts on a bench.

**A timer** is included to set the interval by opening the heating circuit at the end of a predetermined period. The circuit is closed by depressing a foot switch to actuate the solenoid. Power is supplied by connection to a 110-volt ac. outlet.

BREVITY—Identify by IEN - 306 if you write the maker

## COOLING . . Vertical aftercooler for compressed air, two sizes to 50 cfm.

**Source: JAMES A. MURPHY & CO.**
**503 N. 5th St., Hamilton, Ohio**

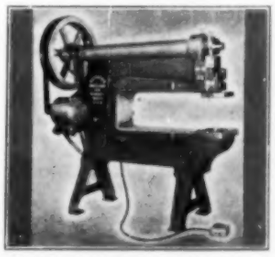
**Cooling water** flows upward through a tube bundle in the cylindrical shell of this new vertical aftercooler. It comes out near the top, turns down through a sight-flow fitting. Compressed air to be cooled is connected near the bottom of the shell with outlet at the top center. An inlet and outlet sizes can be specified to 1 inch.

**Moisture** that separates out of the air flows downward to a trap below the bottom head from where it is ejected as it collects. Two sizes have capacity to 20 and to 50 cfm. Overall height are 30 and 48 inches. Designation is Type V-907.

BREVITY—Identify by IEN - 307 if you write the maker

## PRESS . . Motor driven machine, rates 20 ton, provides 32 in. throat

**Source: PERKINS MACHINE CO.**
**3 Perkins Ave., Warren, Mass.**



**No 10-M-32** is new design of the company's previously developed deep-throat press in which the previous 24-in. throat dimension has been increased to 32 inches. The new machine supplements, does not replace the original assembly. Stroke is standard at 2½ in. with drive by a 1½-hp. 1,200-rpm. motor.

**The bed** measures 10 by 15 in. and has a 6 by 8-in. center opening. Distance from bed to ram is 12 inches. The flywheel at the rear is 28 in. in diameter and carries a safety clutch. Machine weight is 3,200 pounds.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 308 if you write the maker


BE FRESH . . STAY FRESH

*Wear a* **Dupor no. 1**

miniature NOSE MASK for Dust, Fumes, Paint Spray

Has 9 sq. in. filter. Mask is of soft rubber equipped with nose wire that's adjustable to any shape nose. Exhalation valve exhausts breathed air and keeps out unfiltered air. Handy as a pair of glasses. Complete panorama vision, no blind spots. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz.

*Sample sent* $1.10 *pp*

**H. S. COVER,** South Bend, Ind.


BREVITY—Identify by IEN - 309 if you write the maker


*Check* the Fuse You're Using Against these TRICO Features

They're "Powder-Packed"

*Don't be "short-changed" on protection*

**Link Protection**
Fusible link protected against damage . . . Therefore, no needless fuse blowings.

**Safe Time-lag**
Just right. Prevents accidents or destruction of expensive equipment.

**Tamper-proof**
Only ONE link of CORRECT size can be inserted. "Doubling-up" is dangerous.

TRICO Safety *FUSE PULLERS*
They're cheaper insurance against shock, burns, infection and possible death.
WRITE FOR BUL. NO. 5

*YOU GET THREE TIMES THE SERVICE . . .*

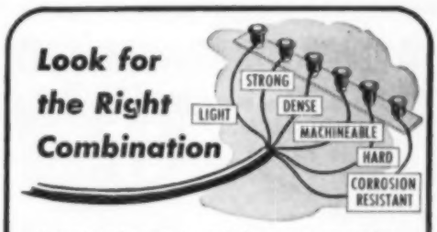
In TRICO Renewable Fuses you get that "different" link. It's custom-built, powder-packed, tamper-proof, non-interchangeable — with *Pre-determined*, SAFE time-lag. That's why TRICO gives dependable, trouble-free protection with THREE TIMES THE SERVICE.

Get the complete story, WRITE TODAY FOR BOOKLET 206-A

TRICO FUSE MFG. CO
MILWAUKEE, WIS. U.S.A.


BREVITY—Identify by IEN - 310 if you write the maker


*Look for the Right Combination*




A good product may be made better, or a process less expensive when you select a material with the right *combination* of electrical, mechanical, and chemical qualities.

Synthane is a material that has this *combination*. Strong, light, hard and dense, it is easily machined on standard equipment. Corrosion and moisture resistant, Synthane also possesses excellent electrical properties such as high dielectric strength, low power factor and low dielectric constant.

You can find out more about Synthane's possible place in your product or process by mailing the coupon below. Why not do it today?

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.

Name _____
Firm _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 311 if you write the maker


A GREAT NEW POWER BLADE

with
• GREATER SAFETY
Shatterproof. Extra Strong Body, Practically Unbreakable
• GREATER PRODUCTIVITY
High Speed Steel Welded Edge for More, Straighter Cuts Per Blade

Starrett®
SAFE-FLEX® HIGH SPEED WELDED-EDGE
POWER HACKSAW BLADES

"DOUBLE WELDED STEEL CONSTRUCTION"

an entirely new development in blade design, makes this the safest, straightest cutting, most durable blade you've ever tried. Its hard, high speed steel cutting edge is integrally welded to a medium hard, extra strong steel center also welded to a super tough steel back. Result is a far stronger blade with a perfect balance between hardness and toughness that makes the Starrett SAFE-FLEX cut straighter, completely shatter-proof and ideal for heavy feeds and rugged jobs such as interrupted cuts and sawing multiple work.

Let your safety engineer prove it for himself. Order some Starrett SAFE-FLEX Welded Edge Power Blades today.

There's a Starrett Blade for Every Job—S-M Molybdenum, High Speed Tungsten 18-4-1, Safe-Flex, Standard-Hand and Power Sizes

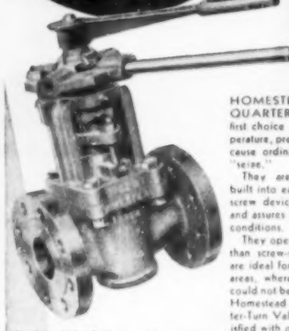
Write for complete Information. • Address Dept. "N"

Starrett
Standard of Precision
BUY THROUGH YOUR DISTRIBUTOR
THE L. S. STARRETT CO. ATHOL, MASSACHUSETTS U.S.A.


BREVITY—Identify by IEN - 312 if you write the maker


This HOMESTEAD VALVE Opens or Closes Instantly

It's STICK-PROOF because it's LEVER-SEALED



HOMESTEAD LEVER-SEALD QUARTER-TURN VALVES are first choice where extremes of temperature, pressure, or corrosive fluids, cause ordinary valves to "stick" or "seize."

They are "stick-proof" because built into each valve is a lever-and-screw device that prevents sticking and assures positive action under all conditions.

They operate 16 to 28 times faster than screw-stem type valves. They are ideal for installation in restricted areas, where other types of valves could not be used. Next time specify Homestead LEVER-SEALD Quarter-Turn Valves. You'll never be satisfied with ordinary valves again.

Send for "Valve Reference Book No. 19-3"

Homestead Lever-Seald Quarter-Turn Valves are available in metals and alloys to suit your needs in sizes from 1½ to 10" for pressures from vacuum to 1500 lbs.

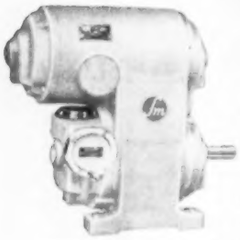
HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"
P. O. BOX 85, CORAOPOLIS, PA.


BREVITY—Identify by IEN - 313 if you write the maker


power modernization

Even a brand new motor may be obsolete . . .

if you do not have control of speed



STERLING
SPEED-TROL
. . . Gives You Variable Speed Control Necessary For:
• PROCESS CONTROL OF: Temperature—viscosity—level—pressure—flow—etc.
• TIME CONTROL OF: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.
• EQUIPMENT ADAPTATION TO: Load variation—sequence synchronization. Size—tension—hardness or shape of materials to be processed—machined—conveyed—blended—mixed—etc.
• VARIATIONS IN: Quality—quantity—operators' abilities—etc.

Ask for your copy of pictorial bulletin No. A-61, showing Sterling Electric Power Driven Turning The Wheels of Industry

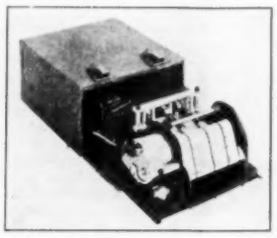
STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.


BREVITY—Identify by IEN - 314 if you write the maker

## TESTING . . Impact recorder for products during handling, shipping

Source: IMPACT-O-GRAPH CORP.
1902 Euclid Bldg., Cleveland 15, Ohio



**Strip chart** measuring 4 in. in width by 60 ft. in length is moved at 1 in. per hour under three stylii by a battery-powered spring-wound clock in this new Impact-O-Graph. The chart is made of sensitized paper to take markings from the stylii without using ink. The markings can be photostated for additional recording purposes. Each stylus of the three makes a record mark on the chart in the event of rough handling that will cause shock loading in vertical, horizontal and lateral directions. Each operates independently of the others.

**The instrument** measures about 9 by 8 by 4 in. without its case, or 9¼ by 8½ by 5 in. when enclosed in a housing available for this purpose. It can be secured inside a packing case, located with a shipment in a truck or car. It will operate without attention for 28 days. When it is opened it will show the record of all movements, the time and direction and security of shock actions that took place.

BREVITY—Identify by IEN - 315 if you write the maker

## FASTENINGS . . Cardboard model shows how company's locking set screw works

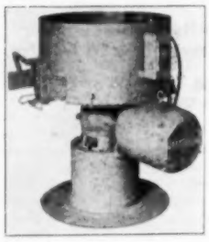
Set Screw & Mfg. Co.
5 Main St., Bartlett, Ill.

**Heavy cardboard** is used for new 6 by 4-in. "Demonstrator" on the company's Zip-Grip locking set screw. In the center is a slot that represents a sectional view through a standard No. 2 tapped hole. Two cut-out models represent a standard set screw and the company's unit. Placing one or the other in the hole lets you compare action.

BREVITY—Identify by IEN - 316 if you write the maker

## FOUNDRIES . . Sand conditioner has flexible blades to blend, aerate

Source: FEDERAL FOUNDRY SUPPLY CO.
4602 E. 71st St., Cleveland 5, Ohio



**Whirlmix** is a new motor-driven sand conditioner for core and facing sand and for dry core compounds with rated capacity on batch operation at 4,000 lb. per hour. The machine takes 200 or 300-lb. individual batches, employs rotating spatula-like flexible blades made of spring steel to provide a folding-squeezing-aerating action. Batch delivery at the end of a 1½ to 3-min. interval is through a side-opening discharge door located 27½ in. above floor level.

**The machine** stands on a floor, does not require a foundation. It weighs about 1,100 lb., can be moved by a lift truck or overhead crane. It is driven by a 5-hp. motor. Overall dimensions are 30 in. in housing diameter, 45 in. in height.

BREVITY—Identify by IEN - 317 if you write the maker

## RELAY . . Mercury plunger design for sensitive electrical actuation

Source: EBERT ELECTRONICS CORP.
185-11 Jamaica Ave., Hollis 7, N. Y.

**Type EM-8** designates new relay in the company's mercury plunger line previously described IEN-10314-50. The new assembly employs an energizing coil in a resonant circuit so the actuating element, a mercury thermometer or a delicate instrument, need supply only enough power to detune on the order of 8 ma. on 100 volts ac. The operating coil in the relay assembly rates 110-volt 60-cycle ac. The relay contacts will carry 35 amp. on 110-volt ac. as their rating in standard assembly.

**The relay** is available in 1, 2 or 3-pole assembly. It terminates tungsten leads in mercury-filled ceramic cups near the bottom of sealed hydrogen-filled glass tubes which also are partially filled with mercury. Magnetic metal plungers float on the mercury until the circuit is closed in the operating coil. Then the plungers are pulled down causing the mercury to rise and close the relay circuits for the control operation desired.

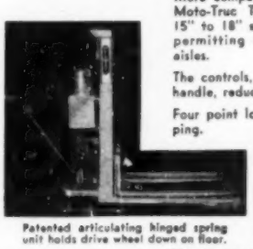
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 318 if you write the maker


INCREASE WAREHOUSE CAPACITY WITHOUT INCREASING WAREHOUSE AREA

by Palletizing with MOTO-TRUCS

SMALLER TURNING RADIUS OF THE MOTO-TRUC



Patented articulating hinged spring unit holds drive wheel down on floor.

More compact power unit makes the Moto-Truc Telescopic Hi-Lift trucks 15" to 18" shorter than other makes, permitting operation in narrower aisles.

The controls, in easy grip roller type handle, reduce operator fatigue.

Four point load support prevents tipping.

Powered by 12-volt motors for level operation, 18-volt for ramp duty.

WRITE FOR BULLETIN NO. 50, and Specifications.

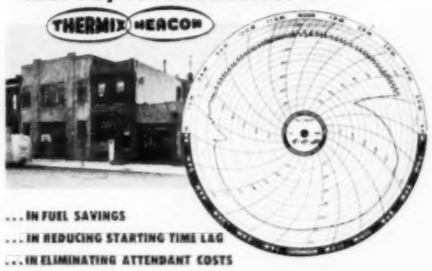
HI-LIFT TRUCKS, PALLET TRUCKS, PLATFORM TRUCKS

The MOTO-TRUC Co.
1913 E. 19th Street
CLEVELAND 3, OHIO.
Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks


BREVITY—Identify by IEN - 319 if you write the maker


Small HEACON DAMPER Applications that Pay for Themselves . . .

THERMIX HEACON



. . . IN FUEL SAVINGS
. . . IN REDUCING STARTING TIME LAG
. . . IN ELIMINATING ATTENDANT COSTS

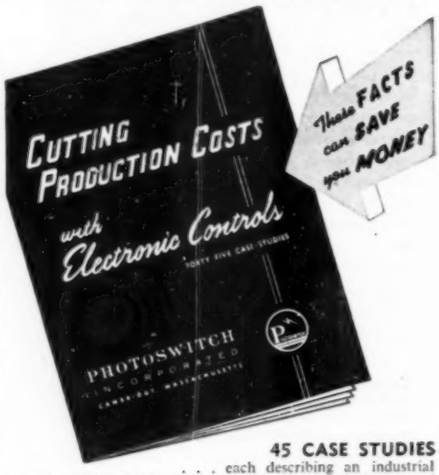
A 200 H. P. Keeler Boiler supplies power for this modern laundry. A Heacon Type L H Damper, located in the duct connecting the outlet of the boiler to a P-D Fan Stack, was installed to maintain pressure during banking periods.

Prior to installation, the boiler was banked at 5:30 P.M., fired to 125 psig at 1:00 A.M. and at 6:30 A.M. available pressure for starting would average 30 psig. Since installation of the Heacon Damper, the oil burners are shut down at 4:45 P.M. and the damper closed. At 6 A.M. when the stop valve is opened, the boiler pressure is 109 psig. This sequence is illustrated by the pressure chart. Approximately 300 gals. of oil are said to be saved each week. In addition, the cost of a watchman to fire the boiler at 1:00 A.M. is saved and an automatic fire alarm system has reduced insurance rates.

Your critical damper problems, large or small, can be solved by Heacon Dampers, at a cost that will pay for itself in six months. Our engineers will be glad to show you how.

THE THERMIX CORPORATION
GREENWICH CONN.
Canadian Affiliates: T. C. CHOWN, LTD.
1440 St. Catherine St. W., Montreal 25, Que. • 50 Abell St., Toronto 3, Ont., Can.


BREVITY—Identify by IEN - 320 if you write the maker


These FACTS can SAVE you MONEY

45 CASE STUDIES

. . . each describing an industrial control problem which has been solved through the use of electronics. Not a catalog . . . it shows HOW photoelectric and electronic controls count, guard, sort, weigh, measure, maintain liquid levels, program operating cycles and do countless other tasks with unfailing accuracy and amazing speed.

Write for your copy today.

PHOTOSWITCH INCORPORATED
75 Broadway, Cambridge 42, Massachusetts

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# ONE ACME

## No. 6 Face Piece

## GIVES YOU ALL 3!

CHIN STYLE . . .

CHEST STYLE . . .

HOSE MASK . . .

### Whatever Protection is Required!

No need to provide extra face pieces to give workers the gas mask protection required for each job! Chin-style, chest-style or hose mask protection . . . the new ACME No. 6 Face Piece gives you all three types of protection . . . along with Full Vision and other important ACME advantages.

Write for new descriptive bulletin No. 504 which shows how to simplify your gas mask requirements.

**ACME PROTECTION EQUIPMENT CO.**
1037 West Lake Street Chicago 12, Illinois

BREVITY—Identify by IEN - 322 if you write the maker

# B.F.Goodrich

## Industrial tire analysis cuts costs up to 50%

Get this man's advice on tire and wheel problems

## TIRE AND WHEEL ANALYSIS PLAN will save you money

**HOW IT WORKS:**
Without obligation, the B. F. Goodrich man who specializes in industrial tire and wheel service will survey your operation. He'll study the loads, the type of hauls and equipment, and the floors and hauling surfaces. Then, he'll recommend the best type, size, tread and tire compound for your work. He'll also give you helpful suggestions on tire care and maintenance. Studies prove that this service saves up to half of tire and wheel costs in 2 out of 3 cases.

**WHY IT WORKS:**
This B. F. Goodrich man represents the *only* company which offers a *complete* line of industrial tires. His advice is impartial—unbiased. He offers 14 types of tires, 7 different tread compounds and a full range of sizes! By using the coupon below, you'll get full information on this savings-service.

The B. F. Goodrich Co.
Department TW-80
Akron, Ohio
Please give me additional information on your new Tire and Wheel Analysis plan.
Name
Title
Company
City State

B.F.Goodrich

BREVITY—Identify by IEN - 324 if you write the maker

## TESTING . . Portable instrument reads material hardness on dial scale

**Source: NEWAGE INTERNATIONAL INC.**
**521 Fifth Ave., 11th Floor, New York 17, N. Y.**

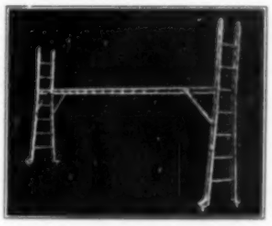
**Capillary tube,** made of glass, is formed into a circle to lie in a protected recess in the case surrounding the dial scale in this new Ernst hardness tester. The tube connects to a chamber filled with a colored liquid in the housing of the instrument above a diaphragm that contacts a spring-backed indenter. The backing spring rates 15½ lb., resists retraction of the indenter by this amount as the instrument is pressed against the surface of a material to be tested. The actual retraction moves liquid from the chamber into the tube to read hardness.

**Indentations** into the work are maximum at .003 in. and not more than .006 in. in diameter. Readings can be obtained on sheet metal as thin as .020 in. and on round bars greater than $\frac{1}{16}$ in. in diameter. Brinell or Rockwell scales can be specified, or other scale, so each instrument will read direct. Dimensions are 2½ in. in diameter by 3 in. in height. Weight is 30 ounces. Movement of the indenter into the work is magnified about 3,000 times by the capillary tube liquid. Assembly is in a case measuring 6 by 3¾ by 3½ inches. Details in 4-page Bulletin ET-84, available upon request.

BREVITY—Identify by IEN - 325 if you write the maker

## SCAFFOLD . . Aluminum ladders assembled in wheel mounted platform

**Source: LOUISVILLE METAL PRODUCTS CO.**
**1099-103 W. Oak St., Dept. C, Louisville 10, Ky.**



**Length** is to 24 ft. with maximum height at 20 ft. and widths of 12 and 20 in. in this new Safe-Weight assembly of three aluminum ladders. The upright units at the ends are mounted on 4-in. casters with locking devices to hold a set position. Planks can be locked in place with pins on the horizontal ladder.

BREVITY—Identify by IEN - 326 if you write the maker

## DRILLING . . Portable electric tool with switch to reverse the rotation

**Source: CUMMINS PORTABLE TOOL DIVISION**
**4738-42 Ravenswood Ave., Chicago 40, Ill.**

**Model 202** is new reversing design of the company's standard portable electric drill which rates ½ in. in metal and 1 in. in wood. The reversing action suits the drill particularly for application in sappy wet lumber, heavy timbers, creosoted planks. It makes tugging and twisting unnecessary in drawing a bit from a completed hole.

**Construction** includes an aluminum housing, universal motor for operation on 110-volt ac. or dc. No-load speed is 550 rpm. A 10-ft. cord and plug and Jacobs chuck are standard equipment. The drill is 12½ in. in length, weighs 8¼ pounds.

BREVITY—Identify by IEN - 327 if you write the maker

## THREADING . . Prong type dies for work diameter from .016 to .250 in.

**Source: WOODRUFF & STOKES**
**583-87 Washington St., Quincy 69, Mass.**

**Tolerances** can be held within .0002 in. on the pitch diameter on work that is threaded with the company's new prong-type dies. They are available to order for specified work to cut 36 to 360 threads per inch in B & S automatic and hand screw machines, in Swiss machines and by hand, to meet intended requirements.

**Each die** is hobbed and lapped for smooth threads and sharp cutting edges. Radial chamfers are ground and honed. The dies are under tension with ring movement permitting a .004-in. adjustment. Each is finished and ground for rake and clearance to satisfy a particular job. High-speed, carbon or alloy steel can be employed. Die holders are available.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 328 if you write the maker

# HYDRAULIC smoothness in a positive MECHANICAL drive

Cone-Drive DOUBLE-ENVELOPING gears give you this "hydraulic" smoothness because:

1. Regardless of the number of teeth in the gear, a full ⅛ of the teeth are **simultaneously** in contact.
2. **Every tooth** remains in **continuous** contact while engaged.
3. **Velocity is constant.**

*Ask us to tell you more about them*

**CONE-DRIVE GEARS**
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

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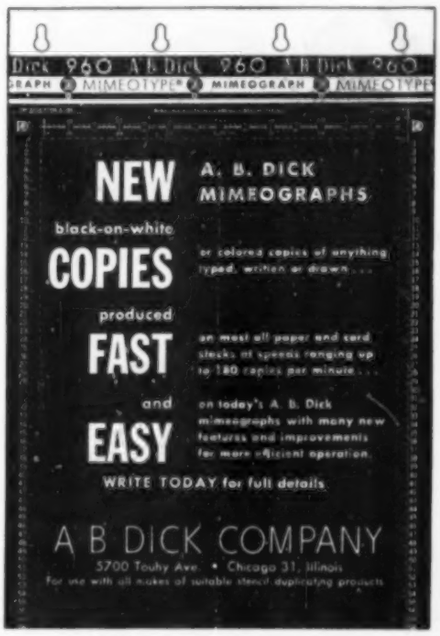



BREVITY—Identify by IEN - 330 if you write the maker

# Plenty of Places...

Where this 3-in-1 Workhorse Will Save Time and Work

Table Top 26" x 43"

**IMMEDIATE SHIPMENT**

**IT'S A WORK BENCH**
A work bench on wheels, with a steel top that moves up and down—that's the Service "Liftable".

**IT'S A TRUCK**
Perfect for moving heavy dies, assemblies from one spot to another . . . saves lifting and carrying.

**IT'S A LIFTER**
Transfers heavy units from one table height to another merely by cranking the top up or down to any height from 28" to 43".

To move heavy pieces, dies, assemblies vertically from one level to another—and then horizontally from one place to another — use the Service LIFTABLE. Lowered, the top is 28" from floor . . . raised, it's 42". Capacity 2000 lbs. . . . chain and screw lifting mechanism . . . all welded construction . . . locks positively at any height . . . readily portable. Cut handling costs—put LIFTABLES in your plant.

*Get Descriptive Circular—Write Today*

**SERVICE CASTER & TRUCK CORP.**
Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.
See your classified Telephone Directory for name of nearest Service Distributor

BREVITY—Identify by IEN - 331 If you write the maker


WHAT'S THE BEST WAY TO CLEAN LARGE METAL PARTS?

## This FREE Oakite Booklet Tells How

HERE'S an easy, low-cost way to clean metal parts that are too large to be soaked in tanks or conveyed through washing machines.

Just use the Oakite Solution-Lifting Steam Gun to apply an Oakite cleaning solution under pressure. Dirt disappears quickly, leaving parts ready for assembly, further machining, pre-paint treatment, etc. (Same gun applies Oakite paint-stripping solutions.)

**FREE** For illustrated booklet F7338—describing the Oakite Steam Gun—write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

*Other efficient Oakite procedures:*

Machine cleaning · Pre-paint treatment · Barrel cleaning · Tank cleaning · Pickling · Burnishing · Electrocleaning · Paint stripping · Rust prevention

SPECIALIZED INDUSTRIAL CLEANING
**OAKITE**
MATERIALS • METHODS • SERVICE

*Technical Service Representatives in Principal Cities of U. S. & Canada*


BREVITY—Identify by IEN - 332 If you write the maker

General ★★★★★

Wirebounds cut damage to as low as 1/10th of 1% for A. O. Smith

CUT YOUR PACKING AND SHIPPING COSTS.. WRITE TODAY

**GENERAL BOX COMPANY ..**
★★★★★ engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc., Houston, Dallas General Box Company of Mississippi, Meridian, Miss.


BREVITY—Identify by IEN - 333 If you write the maker


Foley Sharpened Saws CUT HIGH LABOR COSTS

Your saw operator's production jumps 25 to 40% when the saw he uses is sharpened on a New Model 61 Foley Automatic Saw Filer. His saw will cut faster, smoother, run cooler and *stay sharp longer.*

NEW MODEL 61 FOLEY AUTOMATIC SAW FILER

**Prove it by 30 DAY TRIAL in Your Own Shop**

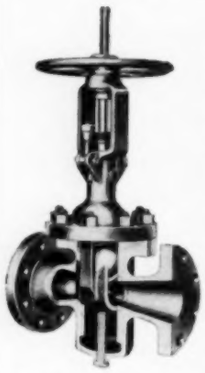
Try the Foley Automatic Saw Filer for 30 days in your own shop. You'll be under no obligation. See how it sharpens your hand saws, band saws up to 4" wide and cross-cut circular saws 3" to 24" in diameter. Notice how the Foley Automatic Saw Filer automatically corrects uneven teeth caused by poor filing and restores them to even size, shape and spacing. You'll say the Foley Automatic Saw Filer is a "must" for every well run woodworking plant. FREE BOOK TELLS HOW—The instruction book that goes with the Foley Automatic Saw Filer is yours for the asking. Here you can read how inaccuracies are eliminated through simple and positive adjustments. This book does a double job . . . helps you cut production costs with better cutting saws and shows you how to lower your saw maintenance costs.

FOLEY MFG. CO.
3369 N. E. 5th St., Minneapolis 18, Minn.
Please send instruction book and information on 30-day trial offer.
Name .....
Address .....


BREVITY—Identify by IEN - 334 If you write the maker

## VALVE . . Ball and venturi design for line service, 150 to 1,500 pounds

**Source: W-K-M CO.**
**220 Roberts, Houston 3, Texas**



**Sizes range** from 1 to 4 in. in the 150 and 300-lb. series, from 1½ to 400 in. in the 600-lb. series and from 1 to 2 in. in the 1,500-lb. series in this new valve. It is being manufactured by the company on license under the Paul patent applications for the same valve previously described IEN-73-50.

**The metal ball** employed as the closing medium is carried in a cradle attached to the rising stem so it is raised for the seat when the handwheel is turned to open position as shown in the illustration. Lowering the stem permits the ball to move down until it is in line with the flow passage. Sealing action is assisted by suction set up in the venturi flow passage. The ball rolls in opening and closing movements to present new surface and eliminate sliding friction.

BREVITY—Identify by IEN - 335 If you write the maker

## MANAGEMENT . . Training school conducted for instrument maintenance men

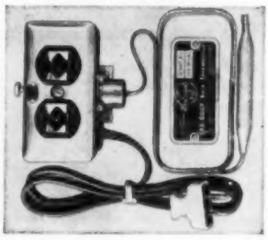
Brown Training School
Roberts & Wayne Aves., Philadelphia 44, Pa.

**Competent** instrument maintenance men are being trained at a school conducted by the company in a three-story building near its Philadelphia factory. Courses consist of lectures, bench and laboratory work. They can be arranged to cover one or all of the company's instruments, or can be specialized for a specific industry if justified by enrollment. Instruction is free. Board, lodging and transportation are extra. Details on request to the Director at the address above.

BREVITY—Identify by IEN - 336 If you write the maker

## THERMOSTAT . . Liquid filled unit operates sensitive switch for control

**Source: GRO-QUICK CO.**
**332-42 W. Huron St., Chicago 10, Ill.**



**No. BT** is a new assembly of liquid-filled temperature-sensitive bulb measuring ½ by 4 in., 3 ft. of tinned capillary tubing, a Micro sensitive switch rated 15 amp. on 220-volt ac. in a housing with two outlet sockets and a length of extension cord and plug. The bulb can be immersed or secured to a surface to pick up temperature changes and actuate the switch in an adjustable range between 46 and 85 deg. F. on a 2-deg. differential.

**The heating load** can be plugged into the outlets on the switch enclosure. The unit has been designed for use with soil or space-heating equipment operating electrically.

BREVITY—Identify by IEN - 337 If you write the maker

## PRESS . . Motor driven machine rates 8 ton, has roll type strip feed

**Source: DI MACHINE CORP.**
**2703 W. Irving Park Road, Chicago 18, Ill.**

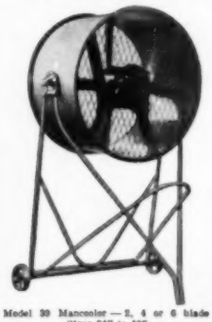
**Die set capacity** for this new 8-ton Diebel Hi-Speed press is to 6 in. in width by 8 in. in length and 6 in. in shut height. The press is driven by a 1-hp. 1,725-rpm. motor and variable-speed transmission for 110 to 350 strokes per minute. Stroke is standard at 1 or 1½ inches. Bed area is 12½ in. left to right, 8 in. front to back. Overall press dimensions are 24 by 30 by 65 inches.

**Construction** is characterized by the 5-in. cylindrical-section ram which rides in a bronze adjustable bearing, by the Formsprag over-running clutch on the feed and by the adjustable cam which releases the feed rolls near the bottom of the stroke so pins in the die set can locate the work strip. The feed itself is adjustable for any work length to 6 inches. The rolls are 3 in. in diameter and can be supplied plain, knurled or rubber covered.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 338 If you write the maker


ADD COMFORT . . . SPEED PRODUCTION with Aerovent MAN COOLING **FANS**



Keep your employees cool for more efficient work. Aerovent "Macheta" airfoil fans are efficient and economical.

Model 30 Mancooler — 2, 4 or 6 blade Sizes 24" to 48"
Other Models: Direct Connected, Extended Shaft, Duct Type, Belt Driven, Pulley Drive. Sizes 12" to 144".

WRITE TODAY FOR ENGINEERING BULLETIN

**AEROVENT FAN CO., Inc.**
Ash & Brown Streets, Piqua, Ohio
*Competent Sales Engineers in Principal Cities*

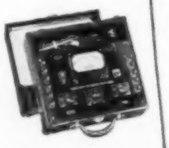

BREVITY—Identify by IEN - 339 If you write the maker


## HERE THEY ARE: Sturdy Instruments for Circuit Checking

Now's the time to make sure you're well supplied with test and service equipment! For fast delivery of these and related instruments, contact your Weston Representative—or write Weston Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and Tagliabue instruments.

**Model 633 A-C Clamp Volt-Ammeter** measures voltage and current without breaking the circuit. Insulated against 750 volts, tested at 2,500 volts. Five current ranges: 10/25/100/250/1,000 amperes. Three voltage ranges: 175/350/700 volts. Takes 2" dia. conductors.

**Model 697 Volt-Ohm-Milliammeter** combines a-c and d-c voltage, direct current, and resistance ranges for general test work. Self-contained battery. Sensitivity 1,000 ohms per volt. Companion portable ohmmeters and volt-ohmmeters also available.



**Model 785 Industrial Circuit Tester** is particularly designed for checking electronic control and power equipment. Seven d-c voltage ranges: .1 to 1000 (20,000Ω/V) . . . Six a-c voltage ranges: 5 to 750 (1000Ω/V) . . . Six d-c current ranges: 50 microamperes to 10 amperes . . . Four a-c current ranges: ½ to 10 amperes . . . Five resistance ranges: 3,000 ohms to 30 megohms . . . All ranges are full scale . . . A-c & d-c current ranges may be extended with external transformer or shunts.

**WESTON** *Instruments*

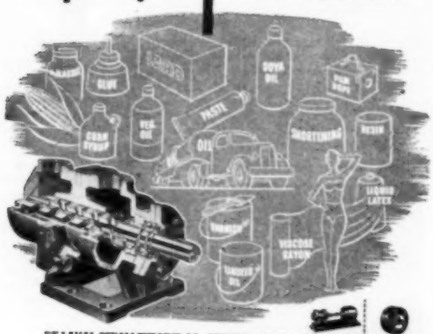
BREVITY—Identify by IEN - 341 If you write the maker

# what do you want to pump?

We frankly don't know all the products that an IMO can pump, but if you want a better way to transfer fluids like these from one place to another, chances are an IMO can do the job for you.

The IMO is a screw-type rotary pump. Its axial flow design permits liquids to be pumped close to the rotating axis of the rotor. This means low liquid velocity through the pump and quiet pulsation-free flow. Capacities range to 1000 gpm at 500 psi and 150 gpm at 1500 psi.

Write for Bulletin I-182A-Q




DE LAVAL STEAM TURBINE CO., TRENTON 2, N. J.
IMO-DE LAVAL PRODUCTS DIVISION

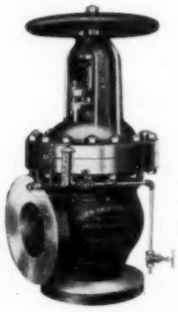
DE LAVAL

BREVITY—Identify by IEN - 342 If you write the maker

## For Safe Protection on Boilers

**GOLDEN-ANDERSON**

*Cushioned* **TRIPLE-ACTING NON-RETURN VALVES**



- Automatic cut-in when pressure equals line-header pressure
- Isolate and prevent return steam flow when boiler pressure is lower than line-header pressure
- Isolate and prevent flow from boiler when break occurs in header

Chatter or hammer is prevented by the special Double Corliss Cushioning design. For less maintenance, longer service and greater all-around dependability, specify GOLDEN-ANDERSON *Cushioned Triple-Acting Non-Return Valves* and get the safety protection you need for high pressure boiler steam flow.

*Write for Bulletin S-1A*

GOLDEN ANDERSON Valve Specialty Company
2079 KEENAN BUILDING • PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 343 If you write the maker

# HANSEN

## "PUSH-TITE" PNEUMATIC-HYDRAULIC COUPLINGS

Positive shut-off in socket immediately upon disconnection by removal of plug. To connect, simply push plug into socket. To disconnect, merely pull back sleeve. Holds high pressures. Swivel action prevents hose kinking. Pipe or hose connections. Socket, brass; plug, steel. Size range 1/8" to 1".

*Also straight-through, and two-way shut-off couplings. Write for catalog.*

THE HANSEN MANUFACTURING COMPANY
8011 WEST 150TH STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 344 If you write the maker

## CONTROL . . Cartesian manostat controls enclosed pressure or vacuum

**Source: EMIL GREINER CO.**
**18-28 N. Moore St., New York 13, N. Y.**

**Transparent Tenite** is employed in the body tube of this new No. 6 design of the company's manostat, previously described IEN-1378-48. Metal parts are made of stainless steel. Gaskets are chemically-resistant synthetic rubber. The float cup or diver can be seen through the plastic as it floats in the mercury seal between the instrument-orifices. Three connections are made to sources for applied pressure and vacuum and to the enclosure in which pressure or vacuum is to be controlled. List price of the assembly is $37.50

**Pressure or vacuum** that is to be the control medium is bubbled through the mercury seal by turning a valve to "start" position. The valve is turned to connect the equipment served to the pressure or vacuum source through the orifice facing down above the inverted cup. This orifice is closed and opened by change in level at which the cup floats under changing conditions. Adjustments are provided to change vertical position of the orifice for operating position setting.

BREVITY—Identify by IEN - 345 If you write the maker

## CONNECTOR . . Electric cable clamp secures to cable for tap-off conductor

**Source: W. N. MATTHEWS CORP.**
**3848-52 Delor St., St. Louis 16, Mo.**

**Ball Clamp** designates new electric cable clamp equipped with a ball to which a tap-off conductor can be connected or disconnected without pitting or burning the main cable. The clamp is equipped with an eye nut as illustrated or with a hexagon nut. It is in three sizes for cable measuring 6 solid minimum to 4/0 strand. Initial installation is by hot-line tools.

BREVITY—Identify by IEN - 346 If you write the maker

## TESTING . . Solenoid type unit reads approximate voltage in a circuit

**Source: SITTLER CORP.**
**20 N. Ada St., Chicago 7, Ill.**

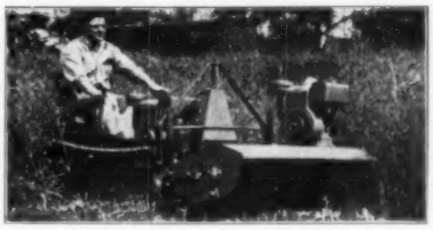
**Range** is between 110 and 600 volts ac. or dc. for this new Catalog AD100 voltage tester. When applied across an unknown circuit it rotates a wheel-type indicator head to read the voltage in four steps of ac., three for dc.

**Feature** in the construction is the three-section coil in which each section is separately insulated to practically eliminate the possibility of short circuit. A magnifying lens at the head end assists in reading the scale.

BREVITY—Identify by IEN - 347 If you write the maker

## TRACTOR . . Power mower attachment on Mighty Mouse miniature tractor

**Source: MEAD SPECIALITIES CO.**
**4112-16 N. Knox Ave., Chicago 41, Ill.**



**New attachment** for weed control mounts on the front of the company's Mighty Mouse tractor previously described IEN-2625-50 in connection with a shovel attachment for construction and yard uses. The attachment mounts its own gasoline engine to drive a set of hinged mowing knives whirling with centrifugal force from a center shaft. The action results in even cutting and spreading. Mower width is 4 feet.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 348 If you write the maker

## THIS makes Sta-Warm compound melters produce FASTER, SAFER, BETTER Longer

MANY feet of this specially processed resistance wire are cemented (and baked) around every Sta-Warm compound and soft metal heating or dispensing tank.

Sometime numerous circuits are employed to provide particular operating requirements and closer temperature tolerances throughout the entire batch of material.

This readily adaptable heating element, plus Sta-Warm's "design know-how", distributes *safe* heat (max. 5w./sq. in.), helps tanks *speed* melting rate and results in continuous compound production at *lower* cost. It also contributes to the *longer* useful life for which Sta-Warm tanks are famous.

Your next compound melter should be a Sta-Warm! Standard or special models for every application. Write today for data sheets.

Here's how Sta-Warm's specially designed heating element covers entire area of typical tank side walls and bottom.

**Sta-Warm ELECTRIC CO.**
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 349 If you write the maker

## the "holes in our heads" are full

. . . OF COST-CUTTING IDEAS

Yes, the "holes" in our engineers' heads are full of ideas to give you newer, faster, lower cost methods of boring . . . methods that save you time and money. If your job needs a special bar or special cutter, we'll design and make it. Chances are a standard Madison cutter in the right Madison bar will give you greater production economy. Let Madison's experienced boring specialists . . . the "men with holes in their heads" . . . help you cut your boring costs. Submit your problems for recommendations by our problem solving tool design department. Of course there's no obligation.

*Write for the information filled Madison Catalog: It is yours for the asking.*

**MADISON** MANUFACTURING COMPANY
Dept. EN Muskegon, Michigan

BREVITY—Identify by IEN - 350 If you write the maker

# BETTER PROTECTION FASTER EXTINGUISHMENT

WITH **ROCKWOOD** TRIPLE-ACTION *LIGHTweight* SG-48 WaterFOG NOZZLES

1. High Velocity WaterFOG
2. Straight Stream
3. Low Velocity WaterFOG from Extension Applicator

Rockwood WaterFOG Nozzles will out-perform any other fog nozzles operating on either high or low pressures for all around fire fighting purposes.

Extinguishes fires in flammable liquids and ordinary combustibles faster and with less water.

Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments, etc.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

Write for bulletin C-501R.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 351 If you write the maker

**Ingersoll STEEL DIVISION**
**BORG-WARNER CORPORATION**
310 South Michigan Avenue, Chicago 4, Illinois
*Plants: Chicago, Illinois; New Castle, Indiana; Kalamazoo, Michigan*

BREVITY—Identify by IEN - 352 If you write the maker

**BONUS NO. 1** Because of the precision-machined, true ball joint, a Dart can be made leakproof without excessive wrenching. Installation is fast—no need to jam a Dart to get a tight joint.

**BONUS NO. 2** A Dart stays tight — bronze-to-bronze seats give longer wear—have higher resistance to pitting and corrosion. And body and nut of high test, air-refined, malleable iron are practically indestructible — shrug off wrench abuse and punishment in use.

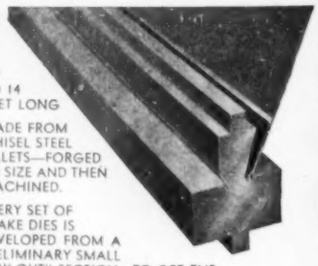
**BONUS NO. 3** Because they never require jamming, the seats in a Dart union retain their true bearing surface — stay unmarred. Thus you can reinstall a Dart again and again — yet be sure of a tight joint.

*For dividends in longer service, faster installation, always specify Darts.*

**E. M. DART MFG. CO., Providence 5, R. I.**

BREVITY—Identify by IEN - 353 If you write the maker

# BRAKE DIES



- UP TO 14 FEET LONG
- MADE FROM CHISEL STEEL BILLETS—FORGED TO SIZE AND THEN MACHINED.
- EVERY SET OF BRAKE DIES IS DEVELOPED FROM A PRELIMINARY SMALL "TRY-OUT" SECTION—TO GET THE RIGHT SHAPE ON YOUR MATERIAL, THEN
- WE MAKE YOUR SET OF PERFECT BENDING DIES.
- BY THE MAKERS OF THE FAMOUS SEMCO NIBBLER PRESS.

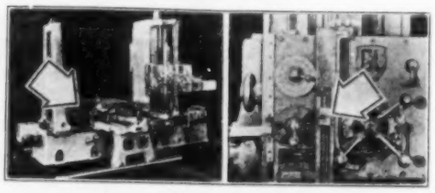
Write for Latest Literature. Ask for Estimates.

**SEMCO**
**SERVICE MACHINE COMPANY**
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

BREVITY—Identify by IEN - 354 If you write the maker

## BORING . . Horizontal machine final positions table and head by power

**Source: GIDDINGS & LEWIS MACHINE TOOL CO. 140-44 Doty St., Fond du Lac, Wis.**



**Vertical position** of the spindle head and lateral position of the work table on its saddles are accomplished by motor drive and electric control in new equipment the company has developed for its horizontal boring machines. Individual units control the table and the head and are actuated by precision limit bars and a dial indicator for an initial setting only.

**A position** is set by starting the machine rapid traverse. This operates until the table or head reaches a stop point where the traverse drive cuts out and a small motor and fine feed cut in. This feed moves the table or head in reverse direction to remove the coasted overtravel and to bring the position to within a fractional thousandth of the predetermined setting. The control is available to specification on new boring machines of the company's manufacture.

BREVITY—Identify by IEN - 355 If you write the maker

## ENGINEERING . . Book of cost data on equipment for chemical process service

Industrial Research Service
50 Masonic Bldg., Dover, N. H.

**Twenty-two men** in industry assisted in writing new 430-page book, "Chemical Engineering Costs", by O. T. Zimmerman and I. Lavine. List price is $7. The book presents cost data in correlated form on such equipment as heat exchangers, dryers, filter presses, centrifuges, crushers and pulverizers, fans, pumps, compressors, meters, boilers.

BREVITY—Identify by IEN - 356 If you write the maker

## PROCESSING . . Mixer-cooker kettle made of stainless steel, steam jacketed

**Source: HAMILTON COPPER & BRASS WORKS, INC. 1765-69 Dixie Highway, Hamilton, Ohio**

**Capacities** range from 30 to 500 gal. in this new line of steam-jacketed equipment. Each is designed to meet ASME specifications for steam-jacketed equipment. Assembly is by welding, grinding and polishing to a mirror finish inside and a No. 4 circular satin grind outside. Working pressure is for 90 and 125 pounds.

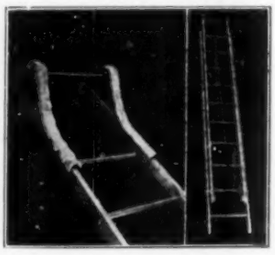
**The assembly** can be specified for full or 2/3 jacketing. Both employ an air-release cock to vent the upper space. Quick-opening bronze gate valves are standard but stainless steel or nickel can be specified if desired.

**Hinged** to the top of the kettle is a base mounting a motor-driven mixer head with an impeller shaped to the interior and fitted with hinged scraper blades. A welded-steel frame provides for floor mounting of the complete processing unit.

BREVITY—Identify by IEN - 357 If you write the maker

## LADDER . . Made of aluminum in 8 to 30 ft. single unit lengths

**Source: METALLIC LADDER MFG. CORP. 203-7 Telegraphic Road, Alexandria, Va.**



**New application** of one of the single-unit ladders in the company's line of aluminum equipment is fitted with aluminum fabric-covered heads to fit the contour of an airplane wing. The ladder is designed for service men who must carry it and climb on the wing.

**Seven lengths** from 8 to 20 ft. with weight at 1.4 lb. per foot are available in the Crestlite model. Five additional lengths from 22 to 30 ft. are available in the Titanlite design weighing 1.9 lb. per foot. In each design the rungs are flared and pressed into sockets that become integral parts of the rectangular-section side rails.

**Extension assemblies** in the Crestlite and Titanlite designs are available in 16 to 40 ft. and 44 to 60 ft. lengths in weights of 1.6 and 2.25 lb. per foot.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 358 If you write the maker

# CHEMICAL-PROOF TEFLON PACKING

## New V-Ring Design — Seals at Low Gland Pressure Reduces Torque on Spindle

Here's a Teflon packing (Chemiseal # 810V) that's mechanically more flexible, more resilient than any design to date. Note cross section: each ring acts as a wedge against the next, so that even a light gland pressure forces the ring lips tightly against spindle and stuffing box. (As working pressure increases, sealing force increases correspondingly.) Light gland pressure, plus Teflon's natural slipperiness, means minimum torque on the spindle—an almost frictionless packing that won't "freeze" a valve no matter how long unoperated.

**Being made of solid Teflon, Chemiseal #810V packing is chemically *inert*—no corrosion, no contamination. These packings are tough and suitable for —150°F. to 550°F. Ideal for hand-, air-, or motor-operated valves, for emergency shut-off service, for slow-speed reciprocating pumps. Needs no more attention than a packless valve. Makes a permanent installation in steam and water service. Send for Catalog No. 810V.**

*Teflon Products Division*
**UNITED STATES GASKET COMPANY**
**658 N. 10th Street • CAMDEN, NEW JERSEY**

BREVITY—Identify by IEN - 359 If you write the maker

BREVITY—Identify by IEN - 360 If you write the maker

# THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

BREVITY—Identify by IEN - 361 If you write the maker

EX-CELL-O Spindles "STEPPED UP PRODUCTION TREMENDOUSLY!"

That's what an electrical manufacturer says about a group of Ex-Cell-O Precision Spindles he purchased. These were of the high frequency, inbuilt motor type, pictured above. If you use precision grinding spindles send for the Ex-Cell-O Spindle Catalog today—no obligation of course. For a quotation on special spindles just send a sketch with basic dimensions and state the speed and horsepower required.

XLO EX-CELL-O for PRECISION

EX-CELL-O CORPORATION DETROIT 32, MICHIGAN

50-17

BREVITY—Identify by IEN - 362 If you write the maker

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. "EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and without obligation.

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-11
2503-05 Third Avenue, New York 51.

SEXAUER WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 364 If you write the maker

## SCAFFOLD . . Tubular steel frames, braces and fittings assemble on job

**Source:** BIL-JAX INC.
102 Wyse Road, Archbold, Ohio

**New design** for the connection between its standardized end frames and the diagonal braces in the company's tubular-steel scaffold permits quick assembly or disassembly without tools and without having to remove the clamping wing nuts from their end-frame studs. The braces are slotted as shown in the illustration to apply over the stud back of the nut. At the same time they lie under a pin welded in place above the stud. This pin makes it necessary for the nuts only to hold in axial direction.

**The line** includes end frames measuring 4 to 6 ft. in width by 2 to 6½ ft. in height. These units assemble one on another and the braces hold the whole structure rigid. Various fittings are included to assemble stationary or portable units, to tie into a structure being serviced.

BREVITY—Identify by IEN - 365 If you write the maker

## PUMP . . Centrifugal graphite unit for pickling and plating solutions

**Source:** NUKEM PRODUCTS CORP.
109-13 Colgate Ave., Buffalo 20, N. Y.

**Nu-Kast** No. 106 is a new centrifugal pump with housing, impeller and integral drive shaft made of acid or alkali-resistant graphite. The shaft mounts a mechanical seal. Drive is by a ½-hp. motor at 1,735 rpm. The pump is designed to handle pickling and plating solutions in transfer service. It rates 35 gpm. at 15 ft., 5 gpm. at 90 feet.

**Pump and motor** are available as a unit for operation on 220-volt ac., or the pump can be specified alone. The pump is not suited for use on nitric or chromic acid or for sulphuric acid with concentration above 75 per cent. Heat-exchanger, available with the pump, consists of tubes and fittings as required made of the same graphite material as the pump.

BREVITY—Identify by IEN - 366 If you write the maker

## GAGE . . Plumb bob and line assembled in a crank operated reel

**Source:** CEDARBERG MFG. CO.
539 S. 4th St., Minneapolis 15, Minn.

**No. 41** is a combination, plumb bob and 100-ft. No. 18 yellow mason's line in a nickel-plated reel. The assembly includes a spring brake to prevent backlash and to hold the bob in a desired suspended position. When the bob is not required and the line is to be used alone the bob is screwed off and set into a bracket at the rear of the reel. List price is $2.50.

BREVITY—Identify by IEN - 367 If you write the maker

## PRESS . . Motor driven machine, rates 15 ton, stroke length to 12 in.

**Source:** PERKINS MACHINE CO.
3 Perkins Ave., Warren, Mass.

**No. 201-S** is new design of the company's previously developed back-geared long-stroke press in which 7 in. was maximum stroke. The new machine is available with stroke to 12 in. and with the height from bed to ram at a maximum of 24 inches. Drive is by a ¾-hp. motor operating at 1,800 rpm. for a crankshaft speed of about 50 rpm. The crankshaft measures 2⅛ in. in diameter. The crankshaft gear is 20 inches.

**Bed dimensions** are 8 by 16 in. with a 4 by 6-in. center opening. Throat measures 6 inches. The ram carries a 1½-in. bore for a tool shank and includes a knockout.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 368 If you write the maker

AIR RAID

Zoom down on Dirt, Dust, and Grit with a CLEMENTS-CADILLAC blower-suction cleaner, and you've got the enemy on the run. Use this powerful air weapon to rout the trouble makers from every crack and crevice of your machinery and equipment. Deal 'em a hard blow—regularly.

SAVE TIME · MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

CLEMENTS CADILLAC PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 369 If you write the maker

FREE! Severance TOOL CATALOG

All cutting tools are clearly described in this new edition

MIDGET MILLS for faster, better, finishing. DEBURRING CUTTERS for quick deburring of holes, tubes, pipes, rods, etc. Some styles deburr both OD and ID of tube, pipe, etc. simultaneously. CHATTERLESS COUNTERSINKS credited with many top production records. TAPER REAMERS, ELECTRODE DRESSERS, CARBIDE HAND FILES and many other Severance designed tools.

Send for your copy today! CATALOG No. 18

- INFORMATIVE
- ILLUSTRATED
- SUGGESTIVE
- DETAILED

A helpful tooling guide for Plant Superintendents, Production Managers, Engineers, Foremen, Purchasing Agents and all others responsible for keeping production tooling costs down.

SEVERANCE TOOL INDUSTRIES, INC.
740 Iowa Avenue
Saginaw, Mich.

BREVITY—Identify by IEN - 370 If you write the maker

RUBEROID RAPID ASPHALT PAINT

A LASTING PROTECTION FOR YOUR EQUIPMENT

Whenever wear, weather or chemical attack are dangers to electric or industrial equipment, use Ruberoid Rapid Asphalt Paint for economical, lasting protection. Highly resistant to most acid and alkali conditions, this asphalt paint is composed of quality grade bitumens.

Almost any surface can have Rapid Asphalt Paint protection. Metal, wood, masonry or fabroid—this tough waterproof paint adheres readily and permanently. Easily applied by brush or spray, it quickly dries to a lacquer-like hardness. Ruberoid Rapid Asphalt Paint is truly a "must" for your equipment!

- High resistance to acid and alkali—protects against wear and exposure.
- Heat resistant—stands temperatures up to 212° F.
- Highly penetrant — preserves wood.
- Excellent electrical insulation qualities.
- Prevents corrosion, rust, rot, and deterioration.
- Tasteless and odorless when dry.

The RUBEROID Co. MORE STARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

EXECUTIVE OFFICES: 500 Fifth Avenue, New York 18, N. Y.

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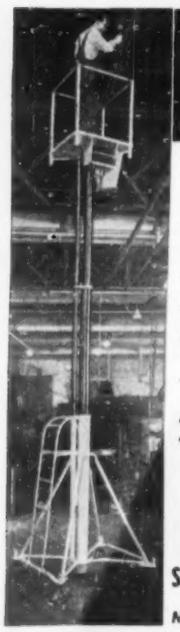

Electro-Hydraulic

## WORK TOWER

RAPIDLY ELEVATED BY PRESSING PUSH BUTTON

*Needs No Connection to Electric Outlet*

The new Safway "Moto-Lift" maintenance tower speeds work at heights to 22-23 ft. Raising and lowering are controlled from the platform by pressing a push button or foot lever. Here's how it operates:

- Platform may be raised to as high as 17 ft. in 25 seconds on hydraulic ram.
- Standard 6 volt storage battery operates hydraulic pump.
- Tower can be raised and lowered 45 times per day on one charge — battery may be recharged overnight.
- Unit easily rolled anywhere on rubber-tired, swiveling casters with safety brakes.
- Broad, stable base is 4 ft. 3 in. square.
- Tower telescopes to pass through doors 7 ft. high by 30 inches wide.

Write for Free Bulletin IEN-151

DISTRIBUTORS IN PRINCIPAL CITIES

**SAFWAY**

**STEEL PRODUCTS, INC.**
6228 West State Street
MILWAUKEE 13, WISCONSIN

BREVITY—Identify by IEN - 372 If you write the maker

Fuller Rotary Compressors have fewer moving parts . . . rotor—bearings—blades . . . than any other machines for similar service. This mechanical simplicity, together with correct design and precision construction, has contributed to enviable records of long, continuous operation, with minimum maintenance expense.

Fuller Rotary Compressors are built in single and two stage for capacities to 3300 C.F.M., pressures to 125-lb. Vacuum Pump for vacuums to 29.90-in. (referred to 30-in. barometer).

Write for Bulletin C-5. It's yours for the asking.

C-150

**FULLER COMPANY**
110 BRIDGE STREET—CATASAUQUA, PA.
CHICAGO 1 · SAN FRANCISCO 4 · WASHINGTON 5, D.C.

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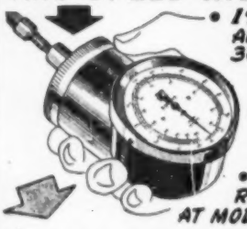
WHEN ACCURACY COUNTS...

*Contact* **SCHERR!**

Control *MAXIMUM PRODUCTION* with

**G. S. HAND TACHOMETERS AND SPEED INDICATORS**



- *1% ACCURACY FOR ANY RANGE FROM 30 TO 100000 RPM OR SURFACE SPEED...*
- *ANTIMAGNETIC DURABLE MECHANISM...*
- *EFFICIENT REPAIR SERVICE AT MODERATE CHARGES*

*Ideal for Motors, Shafts, Spindles, Looms, Turbines for Textile and Power Plants.*

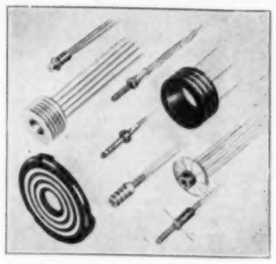
WRITE FOR ILLUSTRATED FOLDER

**GEORGE SCHERR CO., INC.**
*COMPLETE LINE OF PRECISION INSTRUMENTS*
188-8 LAFAYETTE ST. • N.Y.12, N.Y.

BREVITY—Identify by IEN - 374 If you write the maker

## CONNECTOR . . Slip ring assemblies made by depositing silver on plastic

**Source: ELECTRO-TEC CORP.**
**51-55 Bergen Turnpike, Little Ferry, N. J.**



**Silver rings** are produced by electro depositing the metal in grooves machined in plastic bodies in manufacture of this new line of slip-ring or collector-ring assemblies. The operation is carried out after molding the Selectron plastic around the wire leads. Hard silver is employed in the rings. The completed assemblies are machined for exact concentricity and a final flash electro-deposit of palladium plus .00001 in. of rhodium prevents tarnish and provide good wear resistance.

**Each unit** is designed and manufactured for specific requirements. Diameter range starts at .05 in. and can be carried up to several inches. Silver-ring depth ranges between .005 and .007 in. in the small units and from .050 to .060 in. in the larger ones. The company will advise an application.

BREVITY—Identify by IEN - 375 If you write the maker

## TESTING . . Apparatus catalog presents information on some 25,000 products

Burrell Corp.
1940-44 Fifth Ave., Pittsburgh 19, Pa.

**Arrangement** is a feature in the company's new 986-page Catalog 450, available upon letterhead request by laboratories. Products are listed in alphabetical order by names from Acid Pitchers to Wire Gauze. Apparatus for specific tests are grouped under the test name. There is an index to sections inside back and front covers. The general index occupies 84 pages, includes ASTM tests. Descriptions and list prices are given for each product.

BREVITY—Identify by IEN - 376 If you write the maker

## SHEARING . . Reciprocating machine rates stainless steel to 3/16 inch

**Source: BAKER BROTHERS INC.**
**P. O. Box 101-A, Sta. F, Toledo 10, Ohio**

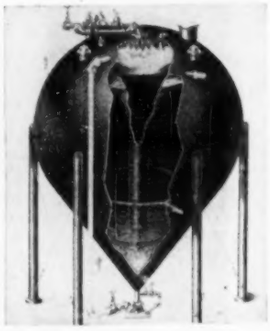
**Tru-Edge Shear** trade names new machine that employs standard ¾-in. tool bits on end in its lower stationery head and in the upper reciprocating head. The bits are sharpened to produce a true shearing action on rapidly-repeated short reciprocating stroke to start a cut inside or outside and to follow any outline. The shearing bits also can be replaced by ground units such as concave and matching convex to form a bead in steel to ⅛ in. in thickness. Other tools apply in forming edge flanges.

**Drive** is by a 1½-hp. totally-enclosed ball-bearing motor to operate on 220/440-volt 3-phase 60-cycle ac. Throat capacity is 48 inches. List price is $1,775 including a lighting fixture, circle-cutting attachment and a set of cutting tools.

BREVITY—Identify by IEN - 377 If you write the maker

## WATER TREATING . . Sedimentation tank for use in hot process water softening

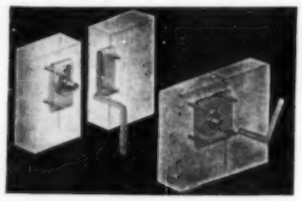
**Source: GRAVER WATER CONDITIONING CO.**
**216 W. 14th St., Room 115, New York 11, N. Y.**



**An inverted cone** to provide uniformly increasing area in upward direction and a hemisphere shaped top for structural strength are employed in the housing of this new sedimentation tank. Raw water, steam and chemical inlets, spray heater deaerator and treated-water collector are assembled in the hemisphere portion. The downtake, sludge bed and rising-water zone are in the cone portion. Each unit is built to meet specific water-treating requirements with rating to 600,000 lb. per hour or more.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 378 If you write the maker



Serrated, tapered cam engages lip—draws panels tightly together when turned by any hand tool.

## How to fasten panels securely —and take them apart easily

Roto-Locks fasten demountable panels quickly and securely —at right angles or butt joint. Just turn the tapered cam to lock, turn again to unlock. Check these other Roto-Lock features, too:

1. Roto-Lock carries *both* heavy shear and tension loads.
2. Exerts enough pressure to form an air- and water-tight seal when gaskets are used.
3. Fastens in any mis-aligned or semi-open position.
4. Recesses *completely* into panels.
5. Has no springs or delicate mechanical parts.

Portable shelters, air freight and cold storage shipping containers, walk-in coolers, demountable furniture and scaffolding are a few of the many products using Roto-Locks. Write today for catalog.

**SIMMONS FASTENERS**
SPRING-LOCK • QUICK-LOCK • ROTO-LOCK
Simmons Fastener Corp., 1758 N. Broadway, Albany 1, N.Y.

BREVITY—Identify by IEN - 379 If you write the maker

This DUREZ Phenolic serves under

**DOUBLE EXPOSURE**

When the job calls for a heat-resistant material that will retain its excellent general properties when wet, Durez 11864 has real advantages. This is a mineral-filled molding compound in which the ability to withstand heat is combined with good water resistance (water absorption 0.1% max.), molding performance, and lustrous finish. With good preforming characteristics, Durez 11864 is the ideal material for many applications encountered in current work.

**Consider**
**DUREZ 11864**
**for**

INDUSTRIAL
AUTOMOTIVE
ELECTRICAL
} HEAT-AND WATER-RESISTANT PARTS

This material is recommended to molders desiring approval under JAN-P-14 or MIL-P-15088. It exemplifies the Durez policy of developing specific phenolic compounds to match the particular needs of the electrical and other manufacturing industries. Durez quality is available in all classes of phenolics.

**SEND FOR DATA**—Specification sheets with full details will be sent promptly on request . . . Durez Plastics & Chemicals, Inc., 1701 Walck Road, North Tonawanda, New York.

DUREZ

*Phenolic Plastics that fit the job*

PHENOLIC RESINS
- MOLDING COMPOUNDS
- INDUSTRIAL RESINS
- PROTECTIVE COATING RESINS

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AMAZING, NEW, WATERPROOF, GLASS-REINFORCED PAPER

GLAS-KRAFT

PROVIDES POSITIVE ALL-WEATHER PROTECTION

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 515 ft. of continuous, specially treated glass yarns swirled into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

GLAS-KRAFT IS VERSATILE

- Wrapping & Packaging—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- Storage—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- Packing & Shipping—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- Building & Construction—As a vapor barrier or side-wall sheathing, protective floor covering, or over subfill.
- Concrete Curing—For concrete floors, driveways, sidewalks and roads.

Glas-Kraft is supplied to the U. S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types B-1, B-2, B-3.

GET GLAS-KRAFT

Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

A Better Paper Product By

GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND

Write today for sample swatches and prices.

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Lightnin® Mixers
MIXCO® Engineered

ILLUSTRATED Lightnin Gear Drive Portable Mixer

WIDEST CHOICE OF STANDARD STOCK MIXERS—Electric and air-driven types, direct or gear drive. Sizes ⅛ to 3 HP. Ready to operate. Full selection of motors and materials. Replacement parts always in stock.

What a Difference the *Right* Agitation Can Make!

On job after job, LIGHTNIN Mixers have cut process time *in half*—improved product uniformity—slashed manpower costs—simply by giving the correct agitation for the job. You can standardize on LIGHTNIN—because there is a LIGHTNIN Mixer for every fluid agitation job! Get the facts . . . write today for illustrated Catalog B-75.

WHAT TO LOOK FOR IN A PORTABLE MIXER

BALL-BEARING MOTORS . . . Semi-enclosed, totally enclosed, or explosion-proof, as required. One of the reasons for LIGHTNIN's exceptionally long operating life.

BALL AND SOCKET CLAMP permits various mixing actions—pulling vortex, heavy rolling action, or LIGHTNIN two-way action. Mixer can be swung out of tank for cleaning.

SEALED OUTBOARD BEARINGS take the load of mixing shaft off the motor bearings. Permanently sealed to prevent leakage and contamination of the mix.

PROCESS ADAPTED AGITATION • TOP ENTERING • LIGHTNIN MIXCO • OVERHEAD • SIDE ENTERING

SEND FOR THESE HELPFUL CATALOGS

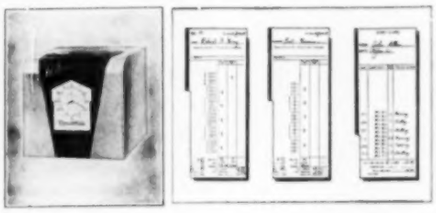
Lightnin Portable Mixers . . . Cat. B-75
Lightnin Propeller Mixers for Closed Tanks . . . . . Cat. B-78
Lightnin Side Entering Mixers for Tanks up to 5 Million Gals. . . . . Cat. B-76
Lightnin Turbine and Paddle Agitators; 1 to 200 HP, Cat. B-89

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Boulevard, Rochester 11, N.Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1
Representatives in Principal Cities

BREVITY—Identify by IEN - 384 If you write the maker

## TIMING . . Electric clock recorder marks worker attendance and job cards

**Source:** CINCINNATI TIME RECORDER CO.
1731-35 Central Ave., Cincinnati 14, Ohio



**Clip-controlled** action that positions an attendance or job card for consecutive up-the-card registering in sequence and eliminates chance overprinting features the operation of this new Clipper recorder. Each time the card is inserted and the recorder actuated to mark a time record a clipper cuts a "bite" from the edge of the card. This registers the card for its next insertion without need for attention by anyone. At the same time the up-the-card registrations make it possible to calculate time intervals in right-side-up subtractions and minimizes the chance for error.

**The recorder** can be equipped with standard hour and minute wheels or with continental hour-numbering wheels reading from 0.0 to 23.0 for hours and tenths. In either case the days of the week are staggered, one toward the right and the next toward the left, to assist in quickly spotting absences on the card.

**The job card** is set up to take consecutive registrations for direct time calculating and provides space for job identification by number and by function. In all cases the card measures 3⅜ by 8¼ in. with other widths to specification. The recorder will take any length from 3 inches up. It is motor driven, master-clock controlled, measures 12¼ by 9¼ by 11½ inches. Details in 4-page Bulletin CTR-2.

BREVITY—Identify by IEN - 385 If you write the maker

## TRUCK . . Engine driven dump unit speed to 16 mph., load rating to 1 ton

**Source:** WHITEMAN MFG. CO.
3247-51 Casitas Ave., Los Angeles 39, Calif.

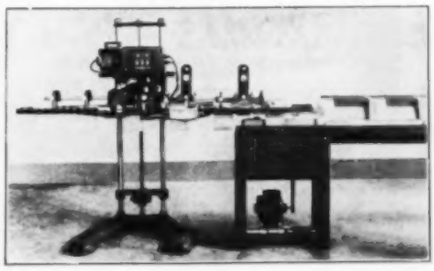
**Model 1950** of the company's engine-driven Power Buggy dump truck, previously described IEN-6842-49, is shown in action in the illustration rigged to transport and pour concrete. Improvements include a rack and pinion for handwheel operation to dump and retract the bucket, increase from 12 to 16 mph. in top travel speed and increase from 12 to 13 cu. ft. in the bucket volume capacity.

**Drive** is by a 7½-hp. gasoline engine under the driver's seat. The drive is through a clutch and speed changer that permits pulling a capacity load up a 25 per cent incline. Steering is at the rear driven wheels to turn in the truck's own length. The operator has a clear view.

BREVITY—Identify by IEN - 386 If you write the maker

## PACKAGING . . Glue sealing machine for filled bags from a conveyor line

**Source:** AMSCO PACKAGING MACHINERY INC.
31-33 48th Ave., Long Island City 1, N. Y.



**Bags to be closed** and glue sealed are fed into this new machine by the filling-machine operator or from a conveyor belt the company can supply. The bags pass through a folding mechanism, an adjustable glue applicator and then through a heating chamber and a compression-belt section where the adhesive is set.

**A thermostat** maintains correct temperature in the glue. Single or double-fold mechanisms can be specified. A crank is turned for height adjustment to take various sizes of bag. Operation is at 600 lineal inches per minute.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 387 If you write the maker

OTC

REPLACE 29 SIZES WITH THESE TWO

NEW GIANT ALLOY adjustable wrenches

THINNER-LIGHTER-STRONGER

Until now 29 wrenches have been needed to handle the jobs done by these two new alloy adjustable wrenches. They are THIN—to get at the work easily. Strong—designed for added strength at leverage points. Light—to make job servicing easy. Economical—saves time, tools and materials. Large jobs become simple ones.

Giant alloy wrench No. OA-24 is 24" long, ⅞" thick, weighs only 10 lbs. and adjusts to 13 standard sizes from 1⅛" to 2⅞". OA-16 is 15" long, 1⅛" thick, weighs only 22 lbs. and adjusts to 16 standard sizes from 2 15/16" to 4¼".

REPLACE 29 SIZES PATENT APPLIED FOR

ANOTHER EXAMPLE OF ENGINEERING THAT MAKES OTC TOOLS OUTSTANDING

OWATONNA TOOL CO.
371 CEDAR ST., OWATONNA, MINNESOTA

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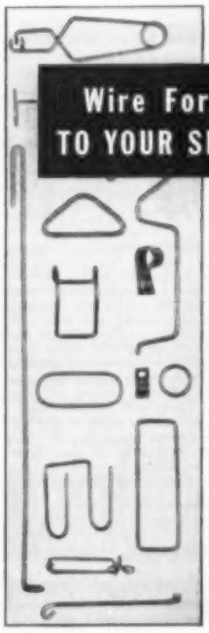

Wire Forms Finished TO YOUR SPECIFICATIONS

● Now, Sommer is equipped to handle *your* wire forms—in a wide variety of attractive finishes.

We have installed fast, automatic nickel-plating equipment for either large or small assemblies. Also, if you want cadmium or zinc plating, bonderized enamel, parkerized or copper-coated finishes—you can count on Sommer.

Complete forming, stamping, cut-threading and butt-welding of light metal parts are also among our services. Whatever your problem, you can save time and money if Sommer handles the *complete* job. Just send sample, blueprint or drawing.

SOMMER METALCRAFT CORPORATION
(Formerly JESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

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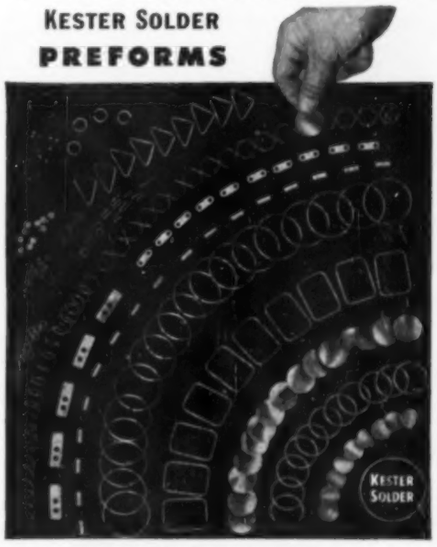
KESTER SOLDER PREFORMS




Use Kester *Soft Solder* Preforms for flame, oven, and induction soldering. Write today for samples and complete information.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39 • Newark, N. J. • Brantford, Canada

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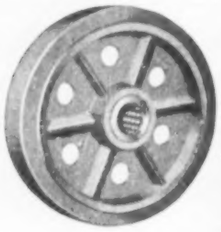

**LANCO**
MOLDED
ON
RUBBER
TIRED
WHEELS

for REPLACEMENT
for MODERNIZATION
for NEW EQUIPMENT

LONG WEARING RUBBER TIRES, MOLDED TO HIGH GRADE IRON WHEELS (SEMI-STEEL) ACCURATELY MACHINED AND FITTED WITH HYATT BEARINGS. COMPLETE SETS OF WHEELS, AXLES, CASTERS FURNISHED TO YOUR SPECIFICATIONS.

LANSING COMPANY

TRUCKS • TRAILERS • BARROWS • CASTERS • CARTS • ETC.

*"Keep Your Products on Wheels"*

Main Office and Factory:
LANSING, MICHIGAN
BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

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**VAC-IT** does all your cleaning JOBS

The durable Doyle Vac-It is constructed to handle any cleaning job in your plant efficiently and without the necessity of changing parts. Wet and dry cleaning jobs are all the same to the Vac-It. Dirt and dust are removed from plant and office floors and walls . . . overhead pipes, production line machinery and installations are quickly cleaned and kept free from clogging dirt and metal scraps with the Doyle Vac-It and Doyle equipment. The Vac-It does not push dirt around . . . it picks it up and removes it from the plant.

The powerful suction of the Doyle Vac-It also recovers lubricants, coolants or water at the rate of 720 gallons per hour.

Vac-It will make all your cleaning jobs easier, faster and less costly.

*Write for complete data today*

*Doyle* VAC-IT

DOYLE VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

BREVITY—Identify by IEN - 392 if you write the maker

*Get this*

**for file reference on small tubing availabilities!**

This handy four page file size folder describes the world's broadest line of analyses, forms, sizes, etc. made by the largest manufacturer of specialty metal tubing. Anyone to whom tubing is an important component or who is contemplating use of tubing should have this folder handy. Superior offers you technology in small tubing. Send for Bulletin 31.

*Superior*

THE BIG NAME IN SMALL TUBING

All analyses .010" to 5/8" O.D.
Certain analyses (.035 max. wall) up to 1 1/8" O.D.

SUPERIOR TUBE COMPANY
2016 Germantown Avenue, Norristown, Pa.

BREVITY—Identify by IEN - 393 if you write the maker

## VALVE . . Safety relief design, nozzle type for pressure to 10,000 lb.

Source: FARRIS ENGINEERING CORP.
550 Commercial Ave., Palisades Park, N. J.

**Pressure** connects at the bottom in this new valve and is directed upward through a nozzle to the closing spring-backed valve head or disc. The unit remains closed until the adjusted spring pressure is exceeded. Then it opens wide under the flow action through the nozzle to provide a coefficient of discharge equal to that through a nozzle issuing direct to atmosphere.

**The valve** is made of forged bar stock with nozzle and disc of stainless steel. Brass, steel, stainless steel can be specified. Three sizes in the line have ½, ¾ and 1-in. ports. Overall height is 6¾ to 8½ inches. Flow capacity with the smallest available port or orifice is 2.4 to 54.4 gpm. at 25 per cent overpressure when the set pressure is 20 to 10,000 lb. and the fluid is water. The smallest orifice measures .156 in. in diameter. Flow capacity under the same conditions handling air is 12.6 to 3,770 cfm. A lever-operated cam lift, as shown, can be specified should this feature be required.

BREVITY—Identify by IEN - 394 if you write the maker

## SELLING . . How to sell to the Government the subject of new 380-page looseleaf manual

B. C. Forbes & Sons Publishing Co.
80 Fifth Ave., New York 11, N. Y.

**Author** of new manual, "How You Can Sell to the Government", is **Harry** A. Rochester, a retired Navy officer with subsequent business experience. His purpose in writing the manual is to present basic data on the marketing activities of the Government in an understandable manner to assist a prospective vendor. List price is $7.50.

**General topics** include the structure of Federal purchasing, sources of basic information, the Federal market and wholesale trade, supply contracts, the processes of buying and marketing, major industrial planning, directory of purchasing offices and items purchased.

BREVITY—Identify by IEN - 395 if you write the maker

## HEATING . . Steam heated space unit in eight ratings, 1,200 to 33,000 cfm.

Source: UNITED STATES AIR CONDITIONING CORP.
3318 Como Ave. S. E., Minneapolis 14, Minn.

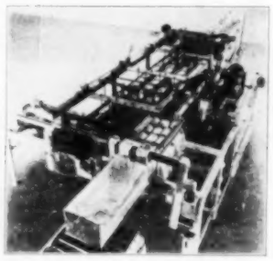
**Heat ratings** are 35,000 to 2,000,000 btu. in a new line of blower-equipped space units for floor, wall or ceiling installation. Each assembly is composed of a basic blower section with an attached heating coil and with outlet cowls that can be attached in any of four positions. Corrosion-resistant finish is employed inside and out. The blower shaft is mounted on self-aligning flange-type ball bearings located in accessible position outside of the unit housing.

**Bulletin 73**, 10 pages illustrates and describes the sectional construction, shows available designs, presents selection data in tabulations based on 60-deg. entering air and 2-lb. steam.

BREVITY—Identify by IEN - 396 if you write the maker

## PACKAGING . . Automatic machine assembles, packs containers into bags

Source: UNION BAG & PAPER CORP.
233 Broadway, Room 1968, New York 7, N. Y.



**The production** of several filling and packaging machines handling materials such as beans, fertilizer, flour, rice, soap powder, salt, sugar, can be directed to this new Automatic Compression Packer. The new machine receives the completed individual containers, assembles them in lots adjustable to a maximum of 25 and inserts them into a single bag or carton.

**It will handle** packages weighing 1 to 25 pounds. Capacity by count is to 15 shipping containers per minute. Feature in the action is compression that packs the individual containers together in the smallest practical volume.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 397 if you write the maker

*NOW WE'RE MAKING THE*

**BEST . . BETTER!**

**PERMABRASIVE**

MADE FROM FAMOUS SHOT • GRIT

With Permabrasive being manufactured from famous T abrasive, you actually have the best made better. Every advantage of T shot and grit is included and improved to provide tough, efficient, longer-lasting, cost-cutting service of Permabrasive.

Give Permabrasive a tryout in your own plant. Get in touch with our nearest office for complete information.

Licensed under U. S. Pat. No. 2184926
U. S. Application No. 619602

Produced Exclusively By
NATIONAL METAL ABRASIVE COMPANY, Cleveland, Ohio
WESTERN METAL ABRASIVES COMPANY, Chicago Heights, Illinois

60th Anniversary 1890-1950

*For full particulars call or write*

**Hickman, Williams & Co.**
INCORPORATED

CHICAGO • DETROIT • CINCINNATI • ST. LOUIS • NEW YORK
CLEVELAND • PHILADELPHIA • PITTSBURGH • INDIANAPOLIS

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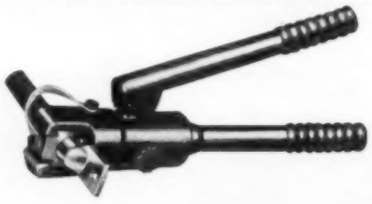


**9 pound Hypress exerts 9 ton pressure**

19 inches long, light weight, handy to operate, this fully insulated hydraulic Hypress (Y34A) delivers up to 18,000 pounds of pressure with automatically controlled depth of indentation. Assures strong, efficient electrical connections every time.

**BURNDY**
ELECTRICAL CONNECTORS

Burndy, N. Y. • Vernon 58, Calif. Burndy Canada Ltd. • Toronto 8, Ont.

BREVITY—Identify by IEN - 399 if you write the maker

**NO DANGER—**
*from*
**FIRE**
*or*
**FUMES!**

**PENETONE SENIOR**
*Non-inflammable, non-toxic*
**CLEANS MACHINES SAFELY**

One tiny electric spark can cause disaster in a room filled with solvent fumes. You don't need inflammable or toxic solvents to clean your machines, floors, tools, or parts. PENETONE SENIOR takes care of 85% of your cleaning jobs *without risk of fire and without toxic fumes.*

Find out about this modern liquid cleaner now in use by the country's leading industries. PENETONE SENIOR has proved safe on all surfaces—wood, concrete, and composition floors, painted walls, and all metals including aluminum.

Send for free *performance-proven* Field Service Reports on Plant Maintenance and Direct Contact Degreasing.

THE PENETONE CO.
BOX IEN-151 • TENAFLY, N. J.

BREVITY—Identify by IEN - 400 if you write the maker

For original installation or for repair, a Tal on-the-job bender for pipe or tubing does in seconds work that otherwise takes many minutes. Because a Tal repays its cost so quickly, and does it time and again, thousands are in use everywhere. Write today for factual bulletin.

**Tal Bender, Inc.** Dept. 2 Milwaukee 2, Wis.

BREVITY—Identify by IEN - 401 if you write the maker

## NEW CUTLER-HAMMER STANDARD DUTY 3 ELEMENT PUSHBUTTON STATION

*with the greatest array of wanted features ever offered to machine designers and users*

Cutler-Hammer announces a new standard duty 3 element pushbutton station for use with magnetic starters on reversing and 2-speed drives. This new 3 element station can be described as the station most closely formulated to the requirements of the men who design, buy, use and service motorized machines. This station has every wanted and important feature, every feature found in any other 3 element station and some features found nowhere else. Check this new pushbutton station carefully and *let your comparison be your guide.* CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

**CHECK THESE FEATURES**

***Let your COMPARISON be your guide!***

New Three Element Pushbutton Station weighs one pound, measures only 5-¼ x 2-¼ x 2-⅛. Beautifully styled. Cover and base desirable U-shape construction, simple, sturdy, accessible. Conduit knockouts *both* top *and* bottom. Cover lifts off when you loosen 2 screws that are retained by fiber washers. Finding guides assist accurate replacement of cover.

Mechanism superbly engineered. Terminals fully exposed, accessible and easily identified when cover is removed. 3 connectors simplify internal wiring. *Wiring cannot interfere with operation of contacts.* Terminals arranged so connections for normal reversing or two speed operation are on one side of the unit and don't cross one another. Stop button has normally closed contacts. Others have normally open-normally closed contacts for maximum circuit utility.

Silver to silver contacts with desirable wiping action that assures good electrical connection even on low voltages.

Pushbuttons are smooth-faced, concave and big for annoyance-free gloved finger operation. Buttons are friction-free, *won't* stick, *will* last longer. Easily replaceable.

The two-circuit buttons are mechanically interlocked for safety and circuit simplification.

Surface mounting at $8.25 list. Flush mounting at $6.90 list.

•

Also available 2 element standard duty pushbutton station with same enclosure features and appearance.

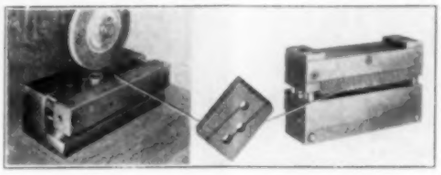
CUTLER-HAMMER MOTOR CONTROL C-H

**NEW 2 element standard duty pushbutton station rated up to 600 volts.** Maintained contact (snap switch) type. With U-shaped cover construction.

BREVITY—Identify by IEN - 403 if you write the maker

## VISE . . Equalizing gang design holds multiple work on machine table

**Source: A. L. DERY & SONS TOOL & DIE CO.**
**50 Main St., Pine Meadow, Conn.**



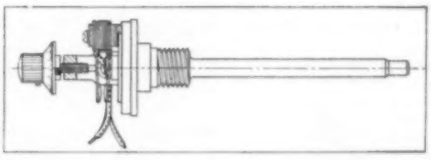
**Three and six position** assemblies are available in a new equalizing gang vise in which work pieces are held in multiple for grinding, milling and other machining operations. The design is characterized by its use of spring-steel equalizing blades that ride in slots opposite to the solid jaw and provide the required spring action to hold pieces that are a bit under as well as over a nominal width or diameter. These blades are centered to match the diameter of the work in a given vise so they all register centrally for three-point holding action with the stationary jaw.

**The three-position unit,** to the left in the illustration, can be set up for work measuring ¾ to 1½ in. in diameter of equivalent section. The six-position vise takes ⅛ to 1 inch. Both are available in 4 to 8-in. length from end to end of the grooves. Height not including the dust plate covering the blade slots is 1⅞ inches. The equalizing blades are made in ¼ to ½-in. widths and are 1¾ in. in height. The holding grooves can be V-type, round or square or special shape to specification. Both vises are suited for holding on a magnetic table chuck or to secure by mechanical means. Springs act against closing screws to release work quickly when the screws are backed up by an operator.

BREVITY—Identify by IEN - 404 if you write the maker

## THERMOSTAT . . Immersion design opens circuit on rise in temperature

**Source: GEORGE ULANET CO.**
**415-19 Market St., Newark 5, N. J.**



**Metal tube** extending from the body of this new Rocket thermostat contains a bar or rod of a material with coefficient of expansion different from that of the tube. The rod bears in the end of the tube and against one side of a set of contacts. As the tube increases in length on increase in temperature the rod retracts to open the contacts. Cooling has the opposite effect, bringing the rod end against the contacts to close them.

**Point of operation** can be adjusted by turning a graduated knob. Contact rating is 1,500 watts on 110 or 220-volt ac. Operating temperature can be specified in an overall range between minus 100 deg. and plus 700 deg. F. Tube length can be 4½ to 18 inches. The housing is 2 in. in diameter. Standard mounting is a ½-in. pipe-threaded boss.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 405 if you write the maker

Specify dy/chek
dye penetrant metal inspection

Simplified Non-Destructive Testing . . .
Any Metal—Anywhere

FASTER, CHEAPER, MORE ACCURATE
Completely Portable, License-Free

Write for Details

dy/chek COMPANY

Division of Northrop Aircraft, Inc.

1520 EAST BROADWAY HAWTHORNE, CALIF.

BREVITY—Identify by IEN - 406 if you write the maker

## Automatic controller introduces 5 important features

It took Bristol to give you—in its Series 500 Air-Operated Controller—these exclusive advantages.

1. *Calibrated control actions.* Three quick settings reproduce previously-established actions exactly.
2. *Zero reset rate and zero derivative time.* Facilitate automatic start-up.
3. *Single adjustment returns instrument to "control" operation.*
4. *Gold-plated "free" vane*—made of beryllium copper for strength, gold-plated for long life.
5. *Reset stops.* Ask about this exclusive Bristol feature.

Write for Bulletin A120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

**BRISTOL**

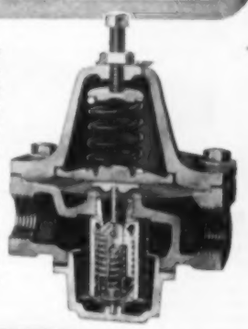
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 407 if you write the maker

## stopping ONE HEADACHE . . .

Once you have chosen Cash-Acme valves as component parts of your factory equipment, you can stop worrying about valve failures or sudden disaster.

We invite you to investigate Cash-Acme direct acting single seated pressure reducing valves for steam . . . water . . . air . . . or gas lines.



**CASH-ACME** *Automatic Valves*

Type B valve. For full information, request catalog 144.

A. W. CASH VALVE MANUFACTURING CORP.

6612 East Wabash Avenue, Decatur, Illinois, U. S. A.

BREVITY—Identify by IEN - 408 if you write the maker

MAIL COUPON TODAY

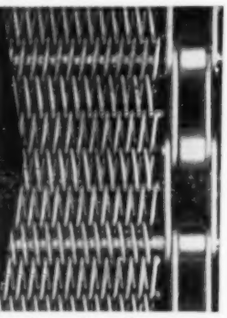
Koehring 304 Crusher Crane, mounted on rubber, goes anywhere . . . is not tied down to tracks . . . increases storage area . . . travels 5.37 m.p.h. . . lifts up to 50,000 lbs. . . is one-man operated. Send for more information and complete facts.

KOEHRING COMPANY, Dept. P, MILWAUKEE 10, WIS.
Please send literature on 304 Cruiser Crane for.....
.....
(Type of plant or work to be handled)
NAME..... TITLE.....
COMPANY.....
ADDRESS.....
CITY & STATE..... IEN KB63

**KOEHRING 304 CRUISER CRANE**
KOEHRING COMPANY, Milwaukee 10, Wis.

BREVITY—Identify by IEN - 409 if you write the maker

# WISSCO BELTS



**step up production—cut down handling costs**

Faster, uninterrupted production . . . in heat treatment of metals, glass and ceramics; and in processing of foods, rubber, textiles, veneers and numerous other products . . . is assured with dependable, long-wearing Wissco Belts.

Fabricated in special weaves and alloys—with or without chain edges—Wissco Metal Processing Belts have high resistance to corrosion, abrasion and temperature extremes.

Write for illustrated booklet describing the many uses and cost-cutting advantages of Wissco Belts.

**WISSCO METAL PROCESSING BELTS** CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION

Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 410 if you write the maker

NEW! **DODGE SLIDE-SET VISE**

Cut away view

SLIDES IN "NEUTRAL"!
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

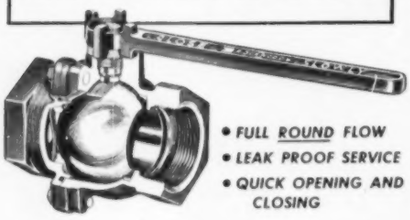
● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 800 Union St., Mishawaka, Indiana

**DODGE**
of Mishawaka, Ind.

BREVITY—Identify by IEN - 411 if you write the maker

**REDUCE VALVE MAINTENANCE COST!**



• FULL ROUND FLOW
• LEAK PROOF SERVICE
• QUICK OPENING AND CLOSING

**ROCKWOOD Ball VALVES**

have already made, in various types of industries, an outstanding record for longer, dependable, efficient performance.

The full round flow, leak proof service, quick opening and closing and no maintenance features make Rockwood Ball Valves your best valve buy on the market. These remarkable engineering features will give efficient and economical operations thru years of everyday rugged use. Together, they help increase your profits and reduce your maintenance cost. Available in all pipe sizes from ½" to 4".

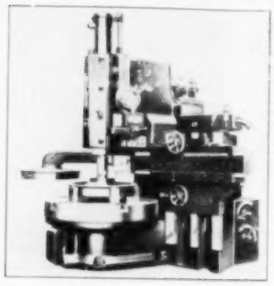
Write for illustrated folder V-4.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 412 if you write the maker

**BORING . . Hydraulic feed machine for diesel locomotive wheels to 48 in.**

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



**Carbide tools** are employed in the main bar of this new wheel-boring machine and also in a 4-position turret on a hydraulic-feed side head to permit roughing, finishing and radius machining as well as machining on the hub shoulders and outer dimensions and on the web and rim as required for balancing. Table speeds and feeds are designed for these tools to apply on wheels to 44 in. in diameter with the flange down and to 48 in. when the flange is up.

**The work** is secured on the table or released when the operator presses the control button. The boring cycle is automatic from initial movement of the starting lever to return traverse of the boring bar and application of the table brake.

BREVITY—Identify by IEN - 413 if you write the maker

**RUBBER . . Silicone compound, molds readily into diaphragms, sleeves**

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

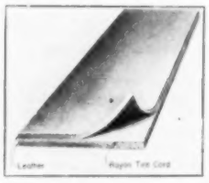
**Can be colored in processing**

**Compound** 81223 is a recently improved form of the company's silicone rubber characterized by its ability to mold easily, its high tensile strength and elongation, its electrical properties and its service range between minus 85 and plus 550 deg. F. in a variety of applications.

BREVITY—Identify by IEN - 414 if you write the maker

**DRIVE . . Flat leather belt, rayon cord reinforced, width to 24 in.**

Source: CHAS. A. SCHIEREN CO.
30-40 Ferry St., New York 7, N. Y.




**Rayon-Core** designates new belt in the company's Duxbak line. The construction employs a layer of rayon cords that take the load without stretching. The belt is available in single, double and three-ply assembly in widths to 24 inches. In each case a single layer of rayon cords lie between the inner ply and the outer portion of the belt.

**The belt** can be scarfed and made endless in the same manner as a belt without the cords. It takes standard fasteners or lacings. It can be salvaged by standard methods. Test installations have operated for periods to six months without need for takeup in the transmission assembly.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 415 if you write the maker

No finger smear
No drawing smudge
with A. W. FABER'S quick-action

**LOCKTITE** black or colored
**REFILL DRAWING PENCIL**

Patented collet clutches lead in bull dog grip — prevents breaking or slipping back into holder.

Holds all the standard graded drawing or retouching leads. WINNER Techno-TONE 1930—degrees 7B to 9H—assures best results.

Also available in RED, BLUE, GREEN, YELLOW, CARMINE, ORANGE, WHITE, and SILVER holding sturdy WINNER-Techno-TONE crayon leads for coloring, sketching and checking.

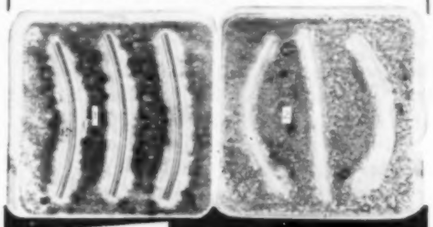
*Unconditionally guaranteed*

AW FABER-CASTELL PENCIL COMPANY INC. NEWARK N.J.

BREVITY—Identify by IEN - 416 if you write the maker

**Now Mildew Resistant Extruded Vinyl Tubing!**

We are now able to supply Syntholvar Extruded Vinyl Insulating Tubing that is mildew resistant. This will be good news to many of our customers who have insulation problems where protection from mildew or fungus is necessary. If you have such a problem, write us for a free test sample.



Result of 28 day Petri dish test on Extruded Vinyl Tubing to determine resistance to fungi and bacteria.
No. 1—Shows treated Syntholvar Extruded Tubing.
No. 2—Shows untreated Syntholvar Extruded Tubing.

**VARFLEX CORPORATION**
306 N. Jay St.
Rome, N.Y.

BREVITY—Identify by IEN - 417 if you write the maker

**ARCCO NEVER-DRY PEN**

*Writes for Months*

**REPLACES OTHER MAKES • USES REGULAR INKS**

Regardless of pulsations or other causes of ink failures this new Never-Dry Pen will make clean and complete records. Ink supply lasts for several months without refilling reservoir. Capillary tube from ink bottle placed in instrument case feeds pen with continuous flow. Closed system sealed from atmosphere prevents clogging and dirt accumulation.

Weight of pen is constant at all times thus insuring extreme accuracy. No slopping or dripping. Stainless steel construction—no corrosion. When ordering, specify make and type of recording instrument.

**AMERICAN RECORDING CHART CO.**
3113 E. 11th St. • Los Angeles 23, Calif.

$6.00 each Net
Send for quantity prices

BREVITY—Identify by IEN - 418 if you write the maker

**Its all in the *Heat Treatment***

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting—The "SOFT" center to cushion the shock—The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

WRITE TODAY for ADDITIONAL INFORMATION

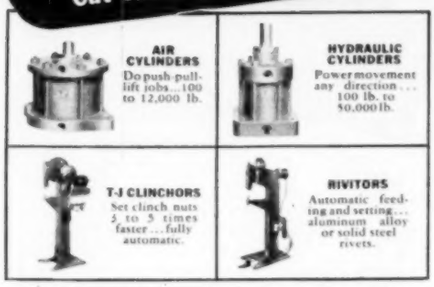
We are also manufacturers of—
• Special branding and knurling wheels .
• Engraved plastic molds . . .
• Name stamps . . .
• Designs and trade marks . . .
• Embossing dies . . .
• Various Marking Dies and Tools

MARKING DEVICES RICK CUTTING TOOLS

PITTSBURGH STENCIL and TOOL COMPANY
405 PENN AVENUE • PITTSBURGH, PA.

BREVITY—Identify by IEN - 419 if you write the maker

## Get T-J for TOUGH JOBS
### Cut Costs . . . Save Labor!




Put T-J to work in your plant—*cut costs* and *save labor!* For "muscle jobs" of pushing, pulling or lifting—100 lb. or 50,000 lb.—T-J Air and Hydraulic Cylinders. For high production setting of rivets or clinch nuts . . . T-J Rivitors, T-J Clinchors. For more work between grinds in tough die steel . . . T-J Cutters. Precision-built with 34 years' experience. Send for catalogs. The Tomkins-Johnson Co., Jackson, Mich.

T-J
**TOMKINS-JOHNSON**
RIVITORS · AIR AND HYDRAULIC CYLINDERS · CUTTERS · CLINCHORS

BREVITY—Identify by IEN - 420 if you write the maker

## MUST YOU MEASURE TEMPERATURE?

**Close?** New TAGliabue "Thermicator" pocketype thermometer reads from −30° to +120°F. (spirit-filled); from 0 to +220°F. (mercury-filled). No cap to unscrew—whisk it out of its case for fast readings, or use it in its ported case where protection is needed. Graduated in 2° divisions.

**Closer?** TAGliabue Standard Grade Etched Stem Thermometers prove valuable and versatile in most laboratory, industrial and general testing work. Reliable, accurate, economical. Armored or unarmored. Graduated in ½° divisions.

**Closest?** New TAGliabue Matched Set of A.S.T.M. Certified Extreme Precision Grade Thermometers provides nine thermometers reading from −36° to +760°F, with overlapping ranges. Graduated in 1/10° divisions.

*Calorimeter thermometers reading to 1/100°C. are also standard.*

All types of laboratory thermometers and hydrometers are detailed in this useful TAG Catalog, No. 1100E. If you ever need to know temperatures, send for your copy today!

**TAGLIABUE INSTRUMENTS DIVISION** TAG
*Weston Electrical Instrument Corporation*
638 Frelinghuysen Avenue, Newark 5, New Jersey

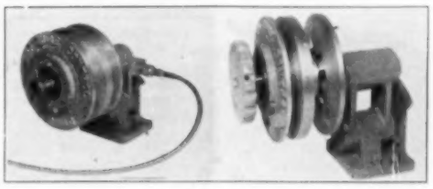
KNOW YOUR CONDITIONS WITH TAG MINIATURE INSTRUMENTS

Midget Moisture Meter For Wood · Pocket "Humidicator" For Humidity · Self-Contained Temperature Recorder

BREVITY—Identify by IEN - 422 if you write the maker

## DRIVE . . Variable pitch sheaves mount between motor and driven machine

**Source: FRAZIER & SON**
**336-40 Cortland St., Belleville, N. J.**



**Two sheaves** for A-section V-belts are mounted on a common shaft in this new variable-pitch assembly. Both sheaves have a movable center flange in common so pitch diameter is decreased in one when the flange is moved to increase it in the other. One of two V-belts applies between the sheave and a fractional-horsepower motor. The other connects between the second sheave and the driven machine.

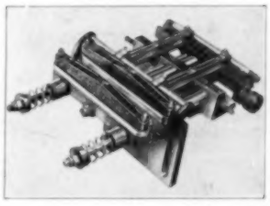
**The shaft** on which the sheaves ride is stand mounted to rock on a pivot under control of a gear and quadrant. The gear is turned by rotating a knob at the end of the shaft or on a flexible extension. Rotating the gear rocks the assembly toward or away from the motor. The movement causes the relative pitch diameters in the sheaves to change in an overall ratio of 3 to 1.

**The sheaves** are 5⅝ in. in diameter and are centered 4½ in. above the base. Overall length shaftwise is 7½ inches. Base width is 3⅝ inches. Distance over the outside sheave flanges is 2½ inches. Fra-Sure is the designation.

BREVITY—Identify by IEN - 423 if you write the maker

## PRESS TOOLS . . Pneumatic feeder for strip stock, width to 8 and 18 in.

**Source: GREAT WESTERN TOOLS INC.**
**3809-13 Riverside Drive, Burbank 26, Calif.**



**New design** of the company's Feedmaster pneumatic strip-stock feeder is available in two stroke lengths maximum at 6 and 12 in. as compared to the 6-in. unit previously described IEN-5902-49. It also is made in two maximum stock widths of 8 and 18 inches. It can be employed with plain, compound or progressive dies to mount on the die or the press for side, front or back push or pull. Operating speed is to 200 strokes per minute.

**Strip stock** is passed through the unit's two heads, one stationary to prevent reverse movement and the other mounted on a pneumatic piston. Air pressure connects through a cam-operated valve with actuation from the press to feed at a desired point in the press cycle.

**Improvements** over the previous design include increased grip capacity in the piston-mounted head, springs on the bar supports to absorb shock load, clamping for the fixed head to the bar supports. Overall height is 4 inches. Overall width is 11½ and 21½ inches. Overall length is 15 or 21 in. plus the feed length which can be set at any amount in the given range.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 424 if you write the maker

## Do you know how much the springs you buy actually cost?

WHEN you c[illegible]ulate the cost of your springs, don't stop with the [illegible]ice billed by your springmaker. Get the whole pictu[illegible] by taking into consideration *all* the costs . . . the i[illegible]pections necessary . . . the delays caused by rejects . . . the hitches in your assembly resulting from spr[illegible]g imperfections. With this data at hand your spring costs may take on an entirely different character.

Why not let cost conscious Accurate engineers appraise your spring requirements . . . the chances are they can cut the overall cost of your springs. Write today . . . and ask for a copy of the new, revised Accurate Spring Handbook.

**ACCURATE SPRING MFG. CO.**
3807 W. Lake Street · Chicago 24, Illinois

Accurate Springs · Springs · Wire Forms • Stampings

BREVITY—Identify by IEN - 425 if you write the maker

CALL IN A QUINCY

**COMPRESSOR SPECIALIST**

He'll be glad to help work out solutions to production and manufacturing problems involving compressed air applications. Remember, Quincy Compressors provide air for *blowing, spraying, starting, lifting, braking, driving, chucking, filling,* and many more operations. Quincy *builds air compressors *exclusively.* Depend on Quincy Compressed Air Specialists for help with your problems. Get details!

**Quincy** COMPRESSORS
QUINCY COMPRESSOR CO.
Dept. H-16, Quincy, Illinois

BREVITY—Identify by IEN - 426 if you write the maker

## NEW Empco JACK Gives you Quick Accurate Machine Leveling and it ABSORBS VIBRATION

New type JACK greatly reduces noise and vibration with VI-SORB Mounting Pads.

**VI-SORB Mounting Pads**

The combination of a new Empco Jack and VI-SORB is a long step forward in setting and keeping power-driven equipment level while combating the destructive forces of vibration.

Empco Jacks are self-aligning to give you the quickest, easiest, most accurate machine leveling ever known.

For precise machine leveling and maintenance you will save time and money if you use Empco Jacks with VI-SORB Mounting Pads. Write for complete information and prices today!

Remember: A level machine—kept on the level—does better work and lasts longer.

EMPCO PRODUCTS

**THE ENTERPRISE MACHINE PARTS CORPORATION**
3737 JEROME AVENUE • DETROIT 12, MICHIGAN

BREVITY—Identify by IEN - 427 if you write the maker

## Saves 2 out of 3 hours!

ROTARY ELECTRIC IMPACTOOL

**A motor rebuilding shop in the Southwest introduced electric Impactools on 5 hand operations with amazing results, which speak for themselves:**

| | By hand | With Impactool |
|---|---|---|
| 1. Disassembly | 70 minutes (longer if rusted) | 30 minutes (even if rusted) |
| 2. Installation of Crankshaft and Main Bearings | 30 minutes | 10 minutes |
| 3. Connecting Rod Bearing Assembly | 40 minutes | 15 minutes |
| 4. Installing Cylinder Head | 20 minutes | 5 minutes |
| 5. Installation of Oil Pan | 20 minutes | 5 minutes |
| Total Time consumed per unit | 180 minutes | 65 minutes |

The 115-minute saving per engine in this shop resulted in an additional net profit of over $50,000 in one year.

*Send for your copy of Impactool Case History No. 5082-6.*

**Ask your Jobber for an Impactool demonstration.**

No Motor Burn-Outs, can't stall motor

No-Kick, No-Twist to operator

**Ingersoll-Rand**
11 Broadway, New York 4, N. Y.
ORIGINATOR OF IMPACTOOLS—air and electric

Runs Nuts · Drills · Masonry · Drives Studs · Bores Wood · Taps · Wire Brushes · Saws Holes · Extracts Broken Studs · Reams · Drives Screws · Drills

BREVITY—Identify by IEN - 428 If you write the maker

## Plenty of room for maintenance

PACKING REPLACEMENT IS QUICK and easy, yet frame is strong and rigid. Pump and motor are mounted on a single shaft in a single frame with no adapter between. Alignment is perfect and permanent.

Bearing maintenance procedures have been eliminated with sealed bearings. A new type of double bearing seal excludes all liquid under all normal operating conditions.

All cast iron frame, replaceable wearing rings, shaft sleeve and other high quality features give you low cost per gallon pumped.

See your Allis-Chalmers Dealer or Sales Office or write for Bulletin 52B6140.

A 3183

ALLIS-CHALMERS, 909A SO. 70 ST. MILWAUKEE, WIS.

**ALLIS-CHALMERS**

BREVITY—Identify by IEN - 429 If you write the maker

## THE BEST FEATURES OF STEEL & CARBIDE ...TO SAVE MONEY ON PRODUCTION DRILLING

*PATENTED

**MEYCO**

**Carbide Inserted Bushings live longer, cost less in the long run.**

Here is a bushing that combines the best features of steel and carbide; the protection of steel and the long life of carbide. First cost: slightly higher than ordinary steel bushings; their life: many, many times as great. In addition to such obvious savings, MEYCO bushings increase the life of drills and reamers, produce accurate work for a longer period of time, save on machine-down time and on non-productive man-hours.

**PUMP MAKER SAYS:** "We have a jig setup where four holes are held to a limit of plus or minus .0005" on the spacing. After completing 150,000 parts, MEYCO bushings show no sign of wear."

Made to A.S.A. Standards; look into this "better" bushing, and cash in on the savings; write for catalog No. 18.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

BREVITY—Identify by IEN - 430 If you write the maker

## New INVINCIBLE "ALL SERVICE" Vacuum Cleaner

*Invincible "All Service" Model 50?—½ H.P.*

**For Both Wet and Dry Recovery**

A frequent difficulty of vacuum cleaners with both wet and dry pickup is loss of efficiency due to humidity causing the filter bag to seal . . . *The advanced design of the new Invincible "All Service" entirely eliminates this problem!* After years of use, the new "All Service" will *continue* to operate at peak efficiency . . . The new Invincible "All Service" also has a *positive, automatic shutoff valve* in the water tank. It prevents messy overflowing that often damages the cleaner.

*Write for complete information*

**INVINCIBLE VACUUM CLEANER MFG. CO.**
DOVER, OHIO

BREVITY—Identify by IEN - 431 If you write the maker

## CLEANING . . Washing machine takes metal parts in reciprocating tray

**Source:** SUPER-SOAK CO.
1439-43 S. 65th St., West Allis 14, Wis.

**Five sizes** are included in the company's new line of metal-parts washing machines previously described IEN-3333-'47. Each mounts a tray on crank arms to be raised and lowered in the tank for repeated immersion and removal from a cold cleaning solution. The action is obtained by a ¼ or ½-hp. motor and geared drive.

**Smallest unit** measures 30 by 20 by 20 in. and mounts a 28 by 18-in. tray. The largest measures 60 by 30 by 30 in. and has a 57 by 28-in. tray. The range of tray movement is sufficiently high above the tank bottom so accumulating sludge inside the tank is not disturbed.

BREVITY—Identify by IEN - 432 If you write the maker

## PROTECTING . . Lead-glass gown covers worker to exclude X-radiation

**Source:** BAR-RAY PRODUCTS INC.
207-11 25th St., Brooklyn 32, N. Y.

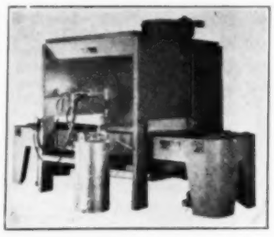
**Lighter in weight than lead-rubber**

**Arms, shoulders,** lower legs, as well as the body, are protected against harmful radiation by a new gown which the company is making under exclusive license. The material is a woven fabric based on spun lead-glass.

BREVITY—Identify by IEN - 433 If you write the maker

## PAINTING . . Pressure spray equipment, conveyor and booth to handle lacquer

**Source:** PAASCHE AIRBRUSH CO.
1948 Diversey Parkway, Chicago 14, Ill.



**Type F42-SL** is a new assembly of spray booth with explosion-proof exhaust equipment to handle overspray, a conveyor with explosion-proof variable-speed drive and two spray guns fed from a 15-gal. pressure container. Booth dimensions are 4 by 5 by 5 feet.

**The equipment** includes an "on-off" control, air conditioner, pressure regulator and the required accessories. Initial development of the assembly was to lacquer book covers at the rate of 4,200 per hour.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 434 If you write the maker

## the No. 1 money saver for your plant

**DEWALT**

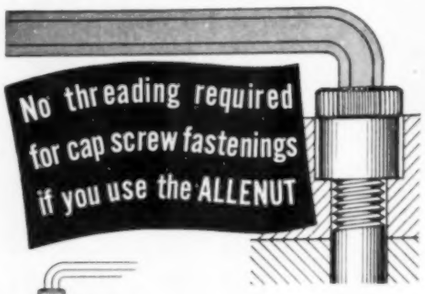
gives you more work for your money in:

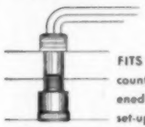
- *PLANT MAINTENANCE*
- *PATTERN SHOPS*
- *CRATING AND BOXING*

This versatile, all-purpose DeWalt is never idle! In your plant, it can take care of all your woodworking needs—quickly, accurately and safely. It is *many* machines in one! Simply by changing the cutting tool, you have another machine! Write for catalog. DeWalt, Inc., 101 Fountain Avenue, Lancaster, Penna.

**DEWALT** A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 435 If you write the maker



FITS DRILLED HOLE — knurled flutes engage counterbore and are self anchoring in non hardened materials. Positive wrenching for extra tight set-up in hardened metals.

This end threaded to class 3 fit to receive screw.

This end a double hex socket to take standard key. Easy removal, ready re-use.

The simple way to repair stripped threads on existing work. The economical practical method for your new product design.

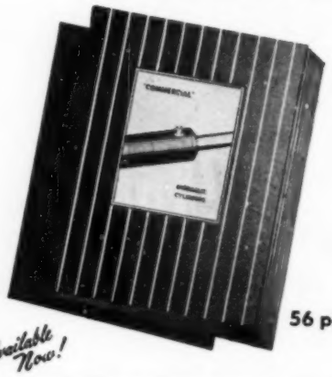
SOLD ONLY THROUGH LEADING DISTRIBUTORS

Write the factory direct for literature or technical data.

**ALLEN** ALLEN HEAD
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.
NEW YORK CLEVELAND DETROIT CHICAGO LOS ANGELES

BREVITY—Identify by IEN - 436 If you write the maker

**FOR THE FIRST TIME**



56 pages

*Available Now!*

To PRODUCT DESIGNERS who can profit by using OIL HYDRAULIC CYLINDERS in their equipment.

Ask for catalog H-3

The COMMERCIAL SHEARING & STAMPING COMPANY
YOUNGSTOWN 1, OHIO

BREVITY—Identify by IEN - 437 If you write the maker

## JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

**BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE**

1. **MORE CAPACITY**—for its weight, size and price.
2. **SELF-PRIMING**—starts instantly with high suction lift.
3. **ONE MOVING PART**—tough, long-lived.
4. **GEARLESS**—impeller outlasts metal gears.
5. **TROUBLE FREE**—simple construction.
6. **ECONOMICAL**—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

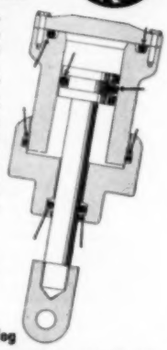
**JABSCO PUMP COMPANY**
2031 N. Lincoln Street • Burbank, California

BREVITY—Identify by IEN - 438 If you write the maker

# O-RINGS by INJECTION MOLDING

## Dependable Hydraulic Seals

Minnesota O-Rings function in air or gas systems as well as in hydraulic systems. Air cylinders . . . hydraulic valves . . . hoisting mechanisms . . . water pumps . . . bottling machines . . . refrigerators . . . motors . . . lubricators . . . are a few of their uses. Minnesota's exclusive injection process makes possible very close dimensions, uniformity in mass production and downright economy. We use special compounds of synthetic rubber to meet your exact requirements. Let us quote on your next hydraulic packing installation.



*Manufacturers of all types of small rubber parts*

**Write for O-Ring Catalog**

**MINNESOTA RUBBER & GASKET CO.**
3640 WOODDALE AVE., MINNEAPOLIS 16, MINN.

BREVITY—Identify by IEN - 439 If you write the maker

# HARNESS YOUR HORSEPOWER WITH

## DIAMOND ROLLER CHAINS and STOCK SPROCKETS

Diamond Stock Sprockets come in a wide range of types and standard sizes to meet most Roller Chain Drive requirements.

### FOR SMALL OR LARGE HORSEPOWERS—ALL SPEEDS

Compact, rugged and uniform in quality, Diamond Chains and Sprockets eliminate the troubles and delays of unnecessary adjustments and replacements. Because they are positive, speed ratios remain at 100% to insure maximum machinery output.

**DIAMOND CHAIN COMPANY, Inc.**
Dept. 465, 402 Kentucky Ave., Indianapolis 7, Ind.
*Offices and Distributors in All Principal Cities*

**Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER**

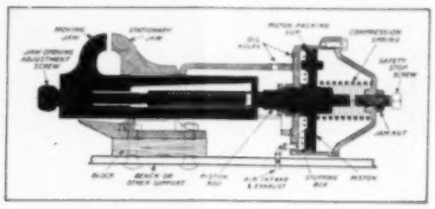
**48-page Catalog 709. Complete selection data for Stock Sprockets and Roller Chains.**

DIAMOND ROLLER CHAINS

BREVITY—Identify by IEN - 441 If you write the maker

## VISE . . Pneumatic design for bench use, interchangeable faces

**Source:** VAN PRODUCTS CO.
2141 Baldwin Bldg., Erie, Pa.



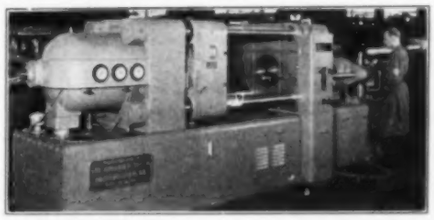

**New design** in the company's previously developed pneumatic vise includes interchangeable jaw faces in Model 457R and Model 457R-6. The faces are made of hardened tool steel with serrated or smooth surfaces as specified. They attach to the jaws with spring-tempered pins that drive into and out of holding position. Special jaws can be positioned in place of the regular faces.

**The two models** are equipped with jaws measuring 4½ in. in width, 1⅛ in. in height with clearance height at 3¼ inches. Maximum opening is 7 inches. One of the two provides 1¼-in. maximum stroke and the other provides 6 inches. Jaw pressure is 50 times air-line pressure. Recommended air pressure is between 15 and 150 pounds. Overall lengths are 29 and 33 inches. Weights are 110 and 140 pounds. List price with a rigid base is $177 and $222. It is $186 and $231 with a swivel base.

BREVITY—Identify by IEN - 442 If you write the maker

## DIE CASTING . . Hydraulic machine for aluminum, magnesium, copper alloys

**Source:** HYDRAULIC PRESS MFG. CO.
301 Lincoln Ave., Mount Gilead, Ohio



**Model 400-M** is a new hydraulic machine mounting 30 by 38-in. platens on tierods that provide 23 by 23 in. of clearance. The movable platen operates through 16 in., provides maximum opening of 42 inches. Clamping pressure is 400 ton by hydraulic pressure on the main ram and an internal booster ram. Retraction is by hydraulic pressure also. Work ejection is by a 5-ton hydraulic ram in the moving platen. This ram has a 3-in. stroke.

**The injection ram** measures 3¼ in. in diameter and is fitted with an 8¾-in. piston. Total stroke is 18 in. with effective stroke at 14 inches. Pressure on the molten metal is 6,200 to 33,600 lb. per square inch. Vertical position of the injection unit is adjustable. The assembly includes two accumulator bottles, electric timer control, automatic sequencing. Production is maximum at 125 shots per hour.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56*

BREVITY—Identify by IEN - 443 If you write the maker

SMALL

# PARTS

**Cost less when made by**

# MULTI-SWAGE

**The economy way to get a million small parts similar to these—**

Examine the tubular metal parts shown here twice size. If you use anything similar . . . in large quantities . . . important savings can be yours. Send us the part and specs. Our quotation will show why the Bead Chain Company's MULTI-SWAGE Process has long been known as the most economical method of making electronic contact pins, terminals, jacks and sleeves. And, why more and more users of mechanical parts (up to ¼" dia. and to 2" length) employ our facilities. WRITE for Data Bulletin.

Trade Mark

**THE BEAD CHAIN MANUFACTURING CO.**
**59 Mountain Grove St., Bridgeport 3, Conn.**
Manufacturers of the Kinkless Chain of a thousand Uses

BREVITY—Identify by IEN - 444 If you write the maker

# Over Half of America's Top Companies Use "Speed Sweep"

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

*Write for styles, sizes and prices.*

**MILWAUKEE DUSTLESS BRUSH CO.**
MILWAUKEE 3, WISCONSIN

BREVITY—Identify by IEN - 445 If you write the maker

# NEW SLIDE CHART

**gives you information on**
- **BENDING RADII**
- **COIL DIAMETERS**

**for Stainless Tubing and Pipe from ⅜" to 5" O.D.**

*Just write a note on your company letterhead and we will send your copy of this useful Carpenter Stainless Tubing Slide Chart.*

THE CARPENTER STEEL COMPANY
Alloy Tube Division Union, New Jersey

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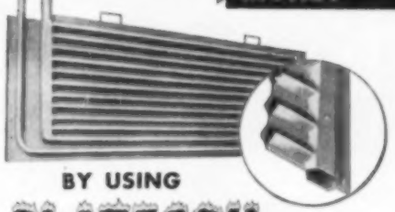
# YOU SAVE
- STEEL
- MANHOURS
- MONEY



**BY USING**

# PLATECOIL FOR TANK HEATING AND COOLING

YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 119" Platecoil weighs 95 lbs. against 239 lbs. for an equivalent 2" pipe coil. 144 lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes . . . No down-time . . . No tank dumping. Many manhours saved.
YOU SAVE MONEY because "Platecoils" cost up to 50% less in initial cost and require less maintenance. Investigate "Platecoils" today.

**Send for complete technical manual and descriptive Bulletin No. P56**

**PLATECOIL**
Division
KOLD-HOLD MFG. CO.
LANSING 14, MICHIGAN

BREVITY—Identify by IEN - 447 if you write the maker

# Anderson BALANCING WAYS

Shops handling rotating parts find this simple, sturdy and thoroughly dependable device highly efficient for balancing and truing operations. It assures better work . . . saves time . . . saves labor. No leveling required.

Four chilled iron discs rotate with minimum friction on sensitive special bearings, giving a quick, accurate indication of whether or not the work is in perfect balance.

| Swing | Greatest Distance Between Standards | Capacity in lbs. |
|---|---|---|
| 20 in. | 20 in. | 1,000 |
| 40 in. | 30 in. | 2,000 |
| 60 in. | 30 in. | 2,000 |
| 72 in. | 66 in. | 5,000 |
| 96 in. | 88 in. | 10,000 |

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Write for Bulletin No. 1-35

**ANDERSON BROS. MFG. CO., Rockford, Ill.**

*Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses.*

BREVITY—Identify by IEN - 448 if you write the maker

BRULIN'S LIQUID

# Steam Cleaner

FOR ALL TYPES OF PLANT MACHINERY

NON-INFLAMMABLE • NOT CORROSIVE
NOT CAUSTIC • NOT TOXIC • NOT ACID

A Liquid Steam Cleaner in CONCENTRATED Form

For a thorough, safe and economical application, use Brulin's concentrated liquid Steam Cleaner. This cleaner may be used in either portable machines such as the Drill or Jenny—or in a stationary machine like the Kerrick Hydro Steam Kleaner. Write for complete information.

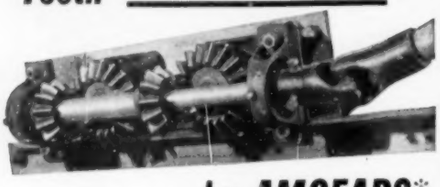
Brulin & Co. Inc. Indianapolis

**BRULIN & COMPANY, INC.**

2939 Columbia Ave. • Indianapolis, Ind.

BREVITY—Identify by IEN - 449 if you write the maker

# Gear Teeth FORGED! by AMGEARS*



Precision FORGED-TOOTH gears eliminated failures of cast-tooth, cast-iron gears on the heavy duty material loader drive shown above. Costs were 50 per cent less than for commercially cut gears.

If you use gears for bevel differentials, farm machinery drives, construction and road machinery or similar slow speed applications, it will pay to investigate FORGED-TOOTH gears. Send blueprints or samples of gears you are now using for comparative application, performance and cost analysis.

* AM . . . Accurately Made

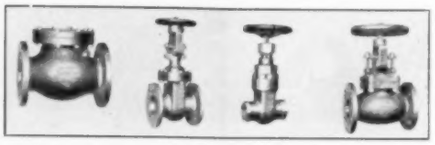
**ALSO: production and precision cut and ground spurs, sprockets, helicals, worms and wormgears; straight and spiral bevel gears and racks.**

AMGEARS, INC.
CHICAGO 32, ILLINOIS
A SUBSIDIARY OF HUPP CORPORATION
CONTRACT MANUFACTURERS
Detroit • Cleveland • Chicago

BREVITY—Identify by IEN - 450 if you write the maker

## VALVES . . Check, gate and globe, stainless steel for corrosive service

**Source: PACIFIC VALVES INC.**
**3203 Walnut Ave., Long Beach 7, Calif.**



**Stainless steel** is now employed as well as cast carbon steel in the company's line of check, gate and globe valves. The stainless-steel units have been added in Type 316 or the company's Alloy 20 for use where corrosive fluids must be handled, where atmospheric corrosion is a problem or where metal contamination must be avoided.

**Stock units** include 150-lb. check valves from ½ to 6 in., 150-lb. gate valves from ½ to 8 in. and 150-lb. globe valves from 12 to 6 inches. Included also are ½ to 2-in. gate valves for pressure to 600 lb. and ½ to 1½ globe valves for pressure rating in their intended service to 300 pounds.

BREVITY—Identify by IEN - 451 if you write the maker

## SEALING . . Canvas-plastic cover to replace steel on boilers, furnaces

**Source: BIGELOW-LIPTAK CORP.**
**2840-44 W. Grand Blvd., Detroit 2, Mich.**

**Bolting or welding are both eliminated**

**Texad** trade names new combination of light-weight canvas and a plasticized synthetic resin emulsion to use as an outer seal covering in place of steel sheet on boilers and furnaces. The emulsion is applied as an adhesive to secure the canvas in place over the finishing coat of insulating cement.

**It seals** the complete setting against air leakage, protects the insulation in indoor or outdoor installation. The finished application is water and weather proof. It dries to a bright white finish that can be left that way or finished with aluminum or other paint as desired.

BREVITY—Identify by IEN - 452 if you write the maker

## CASTER . . Steel and malleable iron ball and roller bearing, 10 and 12 in.

**Source: ALBION INDUSTRIES INC.**
**802 Plastic Road, Albion, Mich.**

**Swivel design** as illustrated and companion rigid assemblies are available in recent addition of 10 and 12-in. trailer casters to the company's line. The swivel unit has a steel top plate, malleable-iron fork. The swivel rides on ⅝-in. steel balls in a 7-in. race and is centered by a Timken thrust bearing.

**The wheel** is mounted on Hyatt bearings on a ¾-in. axle. The bearings ride a hardened and ground bushing on this axle to bring the inside bearing diameter to 1 inch. Texite plastic, Moldon rubber or semi-steel wheel can be specified.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 453 if you write the maker

# STOP TAKE-UPS and DOWN-TIME with...

LEATHER for Greater Pulley Grip and Durability!
RAYON CORDS eliminate stretch and maintenance.
CORDAN LEATHER BELTS deliver More Power, More Production Longer!
CORDAN LEATHER BELTS hold tension, reduce slippage, practically eliminate take-ups and downtime.

*Write TODAY for descriptive, illustrated literature.*

ESTABLISHED 1881 **S. R. SIKES COMPANY** MINNEAPOLIS 15, MINNESOTA

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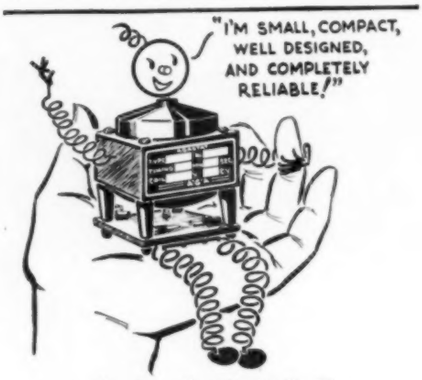



# AGASTAT
## TIME DELAY RELAY

Solenoid actuated – pneumatically timed. For AC and DC service. A special diaphragm and cap encase the head, providing an enclosed, dustproof timing chamber in which the air used for timing is recirculated. Low cost with dependability.

AGA AIRPORT LIGHTING · AGA SUNSHINE REFLECTORS · AGA MARINE LIGHTING EQUIPMENT · AGA AGASTAT TIME DELAY RELAYS

**AMERICAN GAS ACCUMULATOR COMPANY**
1027 NEWARK AVENUE • ELIZABETH 3, N. J.

BREVITY—Identify by IEN - 455 if you write the maker

# IT'S HERE!

# Grafo R-3

*A Smokeless Colloidal Graphite*
## FORGING COMPOUND
*that*

Increases die life
Insures surface quality
Eliminates fire hazards

**A WORKING SAMPLE SENT ON REQUEST**

Other Grafo Colloidal Products Available For All Industrial Lubrication

**"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.**

Write Us Regarding Your Special Applications

**GRAFO COLLOIDS CORPORATION**

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

SHARON, PENNSYLVANIA

BREVITY—Identify by IEN - 456 if you write the maker

# WHALE BRAND HACK SAW FRAMES

The new Butcher Type Handle on Model No. W85 WHALE Hack Saw Frames really takes hold with customers! Superbly balanced, finger-fitted grip of tough rubber composition. *Fully enclosed* protective design. Rugged Forsberg frame. Order this outstanding Hack Saw Frame TODAY!

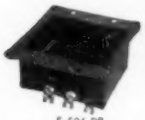
**THE Forsberg MFG. CO.**

BRIDGEPORT, CONNECTICUT

BREVITY—Identify by IEN - 457 if you write the maker

## For HEAVY DUTY WORK! Severest Electrical Services

P-506-CE—Plug with Cap



S-506-DB
Socket with deep Bracket

**JONES PLUGS & SOCKETS**
500 SERIES
*Proven Quality!*

**For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.**

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (rust-proofed). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 500 for full details on line.

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION, CINCH MANUFACTURING CORPORATION, CHICAGO 24, ILLINOIS. SUBSIDIARY OF UNITED-CARR FASTENER CORP.

BREVITY—Identify by IEN - 458 if you write the maker

## WALLS of LIGHT
### protect plant, property, personnel

**Complete systems via Graybar**

Intruders hate light! The safety of any plant, stockpile, or other property is materially increased at night by an encircling wall of light. Employee safety is increased, too, when dark plant areas, indoor or outdoor storage spaces, loading platforms, and yard work areas are well lighted. Your best supply source for complete protective lighting systems is Graybar Electric Company, because Graybar has the most complete selection of lighting units and lamps available anywhere. Graybar also has alarm and sound systems.

### *Expert planning advice*

To assure you'll get the best system for any lighting need, Graybar Lighting Specialists offer you their knowledge gained through planning and supplying plant lighting installations of every type. These experienced men know the latest developments in lighting, know all the details that go to make up efficient lighting. The same specialists can recommend the right lighting equipment . . . can give expert advice on fluorescent, filament, or mercury lamps and lighting units . . . for hazardous locations or other spots.

### Fast delivery of lamps

Graybar distributes every type and size of lamp required to light your plant. They're all G-E, so you get the best in quality and long service. To assure prompt deliveries, Graybar maintains lamp stocks at more than 100 warehouse locations throughout the nation.

### Call Graybar for Everything Electrical

Graybar distributes more than 100,000 electrical products of over 200 manufacturers—carefully selected materials, equipment, and tools for wiring, lighting, communication, power. To save delivery time, thousands of these items are stocked locally at more than 100 Graybar branches. Graybar Specialists in various electrical fields are on call to help you solve unusual problems. Graybar Electric Company, Inc., Executive offices: Graybar Building, New York 17, N. Y. 585A

*You get the best of everything electrical Via GraybaR*

IN OVER 100 PRINCIPAL CITIES

BREVITY—Identify by IEN - 460 if you write the maker

## CONVEYING . . Gravity roller section to assist in truck unloading and loading

**Source: METZGAR CO.**
**417 Douglas St., N. W., Grand Rapids 4, Mich.**

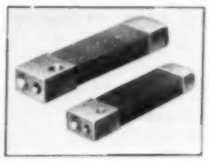
**Save-A-Hoist** in the company's line of gravity roller conveyors has been improved by addition of a truss assembly beneath the roller frame. This frame is made of steel channels and is braced with welded steel cross members. The rollers are ball-bearing mounted and sealed so no service lubrication is required. Grab hooks at one end provide for anchorage to a truck bed.

**Length** is 10 feet. Widths are 15 and 18 in. for the roller assembly. Similar assemblies with wheels in place of the rollers are 11½, 15 and 18 inches.

BREVITY—Identify by IEN - 461 if you write the maker

## RIVETING . . Steel hand set of company's special Mecco steel

**Source: M. E. CUNNINGHAM CO.**
**99 E. Carson St., Pittsburgh 19, Pa.**



**Five sizes** for ¼ to 9/32-in. rivets are included in this new line of hand sets employing the company's non-spalling non-mushrooming steel. Two shank designs are available. In each set is a perforating hole and outlet for slugs and the heading cup for the rivet end.

BREVITY—Identify by IEN - 462 if you write the maker

## TESTING . . Electronic power supply, 30 amp. variable from 24 to 32 volt dc.

**Source: RICHARDSON-ALLEN CORP.**
**15 W. 20th St., 3rd Fl., New York 11, N. Y.**

**List price** is $325 for this new assembly of full-wave six-phase selenium rectifier, rheostat-controlled saturable reactor and the required instruments and accessory equipment for 30 amp. output and continuously variable rating between 24 and 32 volt dc. The price is based on dc. ripple not to exceed 1.5 per cent. The list is reduced to $275 when 3 per cent ripple is permissible. Operation is on ac. input at 220 volts, three-phase 60-cycle power supply rating.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 463 if you write the maker

**WHEN you haul with Moto-Bug you have full power forward and reverse . . . for traveling 1½ to 4 m.p.h. in either direction . . . for backing up . . . for spotting. There's no pushing, no pulling. Operator takes it easy . . . rides on rear step . . . has positive steering wheel for effortless driving. Handy 33" width clears narrow doorways, crowded aisles . . . turns in own length. Simple, standard-make 4 h.p. gasoline engine takes full load up 20% ramps. Carries 10 cu. ft. in big-capacity hopper . . . 1200 lbs. on sturdy 4-ft. flat-bed platform. Fork-lift attachment available. You'll be surprised at the low initial cost . . . Moto-Bug quickly pays for itself with more production per man-hour. Get the facts from your Kwik-Mix distributor, or write us NOW.**

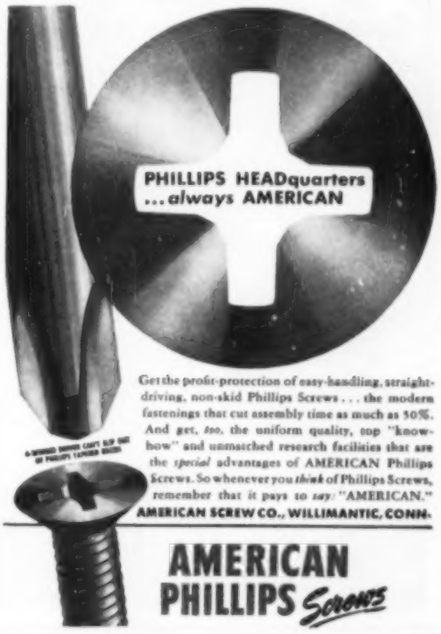
**KWIK-MIX COMPANY** PORT WASHINGTON, WIS. (Koehring Subsidiary)
Also Mfrs. of: CONCRETE • PLASTER • BITUMINOUS MIXERS

BREVITY—Identify by IEN - 464 if you write the maker

EACH AND EVERY
**UNIVERSAL DRILL BUSHING**
is tested for hardness which assures longer bushing life

**UNIVERSAL ENGINEERING COMPANY**
FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 465 if you write the maker




Get the profit-protection of easy-handling, straight-driving, non-skid Phillips Screws . . . the modern fastenings that cut assembly time as much as 50%. And get, *too*, the uniform quality, top "know-how" and unmatched research facilities that are the *special* advantages of AMERICAN Phillips Screws. So whenever you *think* of Phillips Screws, remember that it pays to *say*: "AMERICAN."

AMERICAN SCREW CO., WILLIMANTIC, CONN.

**AMERICAN PHILLIPS SCREWS**

BREVITY—Identify by IEN - 466 if you write the maker

## Versatile
### aid for plant maintenance men

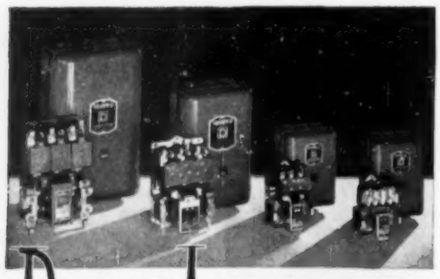
**HEIN-WERNER HYDRAULIC JACKS**
**. . . make pushing and lifting jobs easier**

Hein-Werner HYDRAULIC JACKS

These easy-operating, super-powerful jacks can be used to move, lift or push machinery, equipment, stock bins. Also can be used for pulling gears and pinions, bending pipe and pressing bushings. Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity. Hein-Werner also makes "Push and Pull" Hydraulic Jacks of 4, 10, 20 tons capacity. See your industrial supply distributor or write us.

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

BREVITY—Identify by IEN - 467 if you write the maker



# DESIGN LEADERSHIP in SQUARE D MOTOR STARTERS

• Generous wiring space . . . simple contact change . . . quick coil removal . . . additional electrical interlocks . . . long life . . . NEMA standardization . . . simplified maintenance.

*Write* for Bulletin 8536. Square D Company, 4041 N. Richards Street, Milwaukee 12, Wis.

Ask Your Electrical Wholesaler for Square D Products

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 468 if you write the maker

# Save Valuable Space With the JOY WG-9 "Industrial-Air" COMPRESSOR

The WG-9 features the JOY "Dual-Cushion" Valve for top efficiency in continuous heavy-duty service. Vertical design and small base mean savings on floor space. Fourteen sizes from 96 to 822 CFM. The complete JOY line includes compressors from 81 to 7312 CFM capacity—the most modern available for either centralized or decentralized air supply. *Write for Bulletins.*

WAD 13051

*Consult a Joy Engineer*

JOY MANUFACTURING CO.

General Offices: Henry W. Oliver Building, Pittsburgh 22, Pa.

IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED GALT, ONTARIO

BREVITY—Identify by IEN - 469 if you write the maker

READY NOW! CATALOG NO. 50

# SYNCHRON

TIMING MOTORS TIMING MACHINES CLOCK MOVEMENTS

SEND FOR YOUR COPY

INFORMATION FOR DESIGNERS OF TIMING DEVICES

HANSEN MANUFACTURING CO., Inc., Princeton 2, Ind.

Please send SYNCHRON Catalog No. 50.

Name .....

Firm ..... Position .....

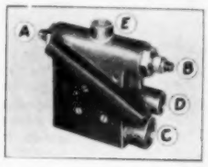
Address .....

City ..... Zone ..... State .....

BREVITY—Identify by IEN - 470 if you write the maker

## SWITCH . . Pressure operated to actuate circuit on pressure change

Source: PANTEX MFG. CORP. Box 660-A, Pawtucket, R. I.




**Cartridge design** of the adjustable pressure element features this new hydraulically-operated electric switch. The element assembles horizontally in the top of the housing as the switch is shown in the illustration. The switch applies to cut a circuit in or out on rising or falling pressure in a hydraulic line. Required pressure differential is 12 to 18 per cent. Contact rating is 10 amp. on 110-volt ac. The contacts can be specified single-pole normally open or closed or double-throw. Dimensions are roughly 5 by 1 by 4 inches.

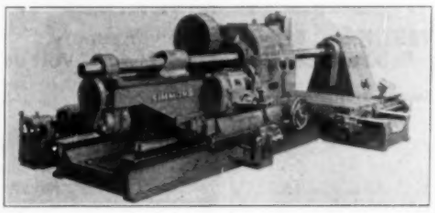
**A control line** from the hydraulic-pressure source connects at A. Pressure adjustment is made at B. Electrical connections are made to the switch through the opening C. The closed opening D is the location for a piston acting as a safety latch in connection with pressure or lack of pressure in a diagonal passage from the pressure-entrance port. The piston prevents operation of the switch when there is no pressure in the line. It withdraws when pressure is applied and the switch is immediately ready for operation.

**A second piston,** acting as an operating safety latch with the first piston, is projected when the first piston is withdrawn to hold the switch in safety position until a predetermined pressure has been reached. This piston then moves to discharge a few drops of hydraulic oil back to the reservoir through the bleed port E. The action prevents the switch from operating prematurely due to vibration or other outside disturbance. It also eliminates need for initial pressure buildup following the start of a hydraulic pump operating on a start-and-stop basis.

BREVITY—Identify by IEN - 471 if you write the maker

## BORING . . Horizontal machine drives 6 in. bar for boring and facing

Source: SIMMONS MACHINE TOOL CORP. 1010 N. Broadway, Albany 1, N. Y.



**Engines,** turbines, compressors are representative equipment for which this new machine is suited to handle the cylinder-boring and facing operations. The machine supports its bar on both sides of the work table which can be supplied with hydraulic traverse or in solid non-traverse design.

**Drive** is by a 40-hp. motor for bar speeds between 3 and 150 rpm. Feed is between .0005 and .500 in. per revolution. The feed is continuous, does not require the usual star wheel. **Standard bar length is 17 feet. Travel in one setting is** through 5 feet. Carbide tools can be employed.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 472 if you write the maker

# FOR LOWER COST *Gas Heating* select Janitrol UNIT HEATERS

LOWER INITIAL COST OPERATING COST MAINTENANCE COST

30 Sizes—Types

Janitrol offers the most complete line of Unit Heaters to meet individual requirements.

If you are planning on modernizing your heating—need supplementary heat for plant enlargement—if you are building or leasing an industrial building—you can save on equipment, operating and maintenance costs with Janitrol Unit Heaters. Remember, you get more worthwhile design features with Janitrol, plus proven performance.

*Write today for complete specifications.*

SURFACE COMBUSTION CORPORATION • DEPT. F, TOLEDO, OHIO

BREVITY—Identify by IEN - 473 if you write the maker

*New centrifuging developments speed chemical processing*

Put current advances in centrifuging to work for you! AT&M Centrifugals, large or small, can save you time, space, costs on all types of processing including impregnation, extraction, filtration, dehydration, coating, precipitation, sedimentation. Made in all machinable metals, these centrifugals have many special features, handle a remarkable variety of materials. In fact, *because of AT&M's free wheeling drive,* they successfully handle materials that ordinarily could not be centrifuged.

Why not send us a sample of your material for confidential analysis and recommendation? No cost or obligation. American Tool & Machine Company, 1417 Hyde Park Ave., Boston 36, Massachusetts.

SAVE TIME, SPACE AND COSTS WITH A.T. and M. CENTRIFUGING

BREVITY—Identify by IEN - 474 if you write the maker

*Write for Catalog* OF USES and SPECIFICATIONS

# GENERAL Industrial Pneumatics

ADD THESE 6 SELLING POINTS TO YOUR PRODUCT

SAVE
• TIME • LABOR
• FLOORS

REDUCE
• BREAKAGE
• MAINTENANCE
• COSTS

Available in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

*Rigid* CASTER FORKS *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

*More* AIR VOLUME • *More* STABILITY • *More* LOAD CAPACITY

DELIVERS *Long Mileage* IN HI-SPEED SERVICE

SEND FOR CATALOG . . . DEPT. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 476 If you write the maker

*Another Bancroft-Hickey Original*—a wafer-thin abrasive bite for a fine tooth comb.

Others said it couldn't be done—a resinous bonded abrasive wheel that thin (.013 in.) would "dish." Clearly impossible . . . yet we came up with another Bancroft-Hickey Original, a wheel that is that thin but *will not* dish. And the manufacturer of this comb is now equipped with a more efficient, 3-surface bite . . . a more economical, long-term bite than he could ever have hoped for with steel.

If you have an "impossible" grinding problem, take a tip—the answer's in a Bancroft-Hickey Original. Get in touch with us today.

*Bancroft-Hickey Originals—special wheels for special purposes . . . as individual as a thumb-print.*

**BANCROFT-Hickey**
MANUFACTURING COMPANY
BRISTOL, PA.

BREVITY—Identify by IEN - 477 If you write the maker

**NEW TYPE CI**

**ADJUSTABLE THERMOSTAT**

The new Type CI Adjustable Indicating Thermostat is a precise temperature control for gas, liquid, and metal-to-metal applications, such as ovens, hot plate presses, water baths, incubators, proofing cabinets and cold cabinets. It is most useful on units where periodic checks of temperature are required, advisable, or will prove time-saving. The new Type CI is simply and ruggedly built, employing the highly sensitive response action of a solidly liquid-filled bulb and bellows assembly to a snap-acting switch and indicating pointer. The thermostat is adjustable over its entire range by a knurled thumbscrew on the front of the case.

**SPECIFICATIONS:**
Case 3½ x 3½ x 1¾", Wt. 3 lbs. Standard ranges 50°—350°F and 50°—600°F, special ranges may be had between —120°F and +600°F. Standard differentials ½°F in circulating liquid, 2°F in air. Switch ratings 10 amp 125 V AC and 5 amp 250 V AC. Write for new bulletin No. 4816T which gives full details.

**UNITED ELECTRIC CONTROLS COMPANY**
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 478 If you write the maker

**Handle Materials More Efficiently With This New**

**Bristol**
THE HORTON BRISTOL MFG. CO.
BRISTOL, CONNECTICUT

**RIGID ADJUSTABLE HOIST CONTROL**

**PRICE $5.00**
f. o. b.
Bristol, Conn.

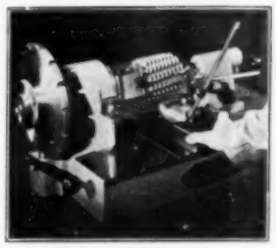
BRISTOL has now simplified and greatly improved the operation of hoists with this new RIGID ADJUSTABLE HOIST CONTROL. Gives positive hoist operation with *one single control.* Helps increase production. Saves operator time and fatigue. Easily installed on most light-duty electric hoists. For descriptive literature write:

SPECIAL PRODUCTS DIVISION
THE HORTON BRISTOL MFG. CO.
BRISTOL, CONN.

BREVITY—Identify by IEN - 479 If you write the maker

## GAGE . . Indexing fixture and mounted indicator to check hobs

**Source: BARBER-COLMAN CO.**
**1312-16 Rock St., Rockford, Ill.**



**Inaccuracies** in hobs and formed cutters due to face sharpening are uncovered and measured with high precision by this new Hob Sharpening Checker. It consists of an indexing headstock and a tailstock mounted on a finished base and a universally adjustable stand supporting a dial indicator. On the headstock is a reference shoulder to set the indicator finger at exact center.

**A micrometer** is built into the headstock to set the indicator off center to check negative and positive rake angles. An alignment bar on the base guides the indicator stand so it can be moved at right angles with the hob axis to check the faces of helical gash tools when these are to be inspected.

BREVITY—Identify by IEN - 480 If you write the maker

## REAMING . . Adjustable blade tools for hand and machine use, to 2⅜ in.

**Source: ERIC S. JOHNSON CO.**
**228-32 E. Ohio St., Chicago 11, Ill.**

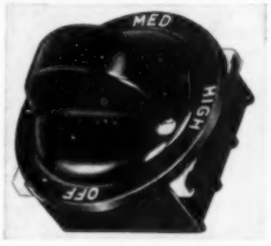
**Packaged in wood boxes**

**Swedish steel,** high-speed type, is employed in the differentially-set adjustable blades in a new Carl Larsson line of hand and machine reamers. Hand reamers are available with pilots or in plain design in sizes from 19/64 to 2-5/32 inches. Machine reamers are supplied with left-hand spiral in standard construction in a range from 61/64 to 2-23/64 inches.

BREVITY—Identify by IEN - 481 If you write the maker

## SWITCH . . Multi-point rotary, snap acting, 15 amp. on 110-volt ac.

**Source: ARK-LES SWITCH CORP.**
**51 Water St., Watertown 72, Mass.**




**Series 2800** is a new enclosed rotary switch available in a number of combinations of single and double-pole designs to a maximum of four positions including "off." The switch measures 1¾ by ¾ by 1¾ inches. The operating head can be black, white or colored plastic. The shaft is ¼-in. in diameter with a flat on the side.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 482 If you write the maker

**REDUCE PRODUCTION COSTS**—F.O.S. Tape is handy, versatile, inexpensive. Simplifies production in *many* ways . . . Stays put—but can be removed quickly without requiring "cleanup." Let SEAMLESS analysts show you how to save time and money with F.O.S. No obligation! . . . *Write today for samples and prices.*

*Finest Quality Since 1877*

REG. U. S. PAT. OFF.

INDUSTRIAL TAPE DIVISION
**THE SEAMLESS RUBBER COMPANY**
NEW HAVEN 3, CONN., U.S.A.

BREVITY—Identify by IEN - 483 If you write the maker

BREVITY—Identify by IEN - 484 If you write the maker

**Another Hermetic Unit Gets Positive Burnout Protection WITH**

**KLIXON Dome Mounted PROTECTORS**

Illustrated, above, is the installation of a Klixon Dome-Mounted Protector in a well-known hermetic unit. Actual operating experience proves that the units protected by Klixon Protectors give years of trouble-free service without burning out.

Here's why — mounted on the dome where they follow every motor temperature change, Klixon Protectors shut the power "off" should the motor become dangerously overheated, regardless of the cause. Then, when the motor cools sufficiently, they snap the power "on" again automatically, enabling the unit to maintain refrigeration.

Whether you use hermetic units, oil burners, or other electric motor-driven appliances, it will pay you to specify motors with Klixon Protectors. They will reduce your service calls, minimize repairs and replacements . . . help you build and maintain customer goodwill.

**KLIXON** SPENCER THERMOSTAT
*Division of Metals & Controls Corp.*
201 FOREST STREET, ATTLEBORO, MASS.

BREVITY—Identify by IEN - 485 If you write the maker

## Hydro-Clone Eliminates Odors *from* oil-blowing tanks

The nauseating discharge from two oil-blowing tanks in a paint and varnish works became a neighborhood nuisance. A single Whiting Type "S" Hydro-Clone (photo at right) eliminated the fumes so completely that odors could scarcely be detected at the exhaust.

Type "S" Hydro-Clone is extremely efficient in disposing of gases and fumes as well as fine dusts. It handles hot air and gases up to 1,200F . . . is available in capacities from 2,000 to 30,000 cfm. Fully described in Bulletins FY-110 and **FY 166.**

Whiting Hydro-Clones are available in types for every industrial need.

**WHITING CORPORATION**
15629 Lathrop Ave.
*Harvey, Illinois*

FREE
New booklet of Practical Information on Dust Collection. Ask for Bulletin FY-142

BREVITY—Identify by IEN - 486 if you write the maker

around the world, it's

# HOOVER BALLS

made of

CHROME STEEL • CARBON STEEL • STAINLESS STEEL BRASS • BRONZE AND MONEL METAL

*"America's Foremost Ball Manufacturer"*

**HOOVER BALL and BEARING CO.**
Ann Arbor, Michigan

BREVITY—Identify by IEN - 487 if you write the maker

# DUMORE POWER-FLEX

"Hassim handles all our finishing with his Power Flexes"

## FOR FAST, LOW-COST FINISHING

Here's the answer to the need for a flexible-shaft tool that handles cost-cutting carbide rotary files and cutters. With Power-Flex, there's less end-of-day drop in output, because the 6-oz. handpiece is all the worker holds — power plant stays on bench. Jobs get going faster, because there are no clumsy air connections — just plug into nearest socket.

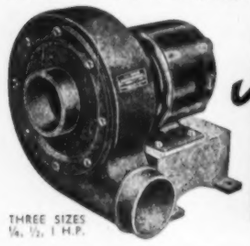
See this cost cutter work in your own shop. Call your Dumore Distributor today for a demonstration. Free catalog sent on request.

Handles Carbide Cutters

**The DUMORE Company**
Dept. A-47, RACINE, WISCONSIN
Export address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 488 if you write the maker

## READY TO RUN—IMMEDIATE DELIVERY!



THREE SIZES ¼, ½, 1 H.P.

# Sutton MOTOR DRIVEN PRESSURE BLOWERS

## MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY

CENTRIFUGAL TYPE designed to deliver an even, non-pulsating flow of air for blowing or exhausting. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. • Housing, base, support, and impeller are constructed of cast aluminum alloy to reduce weight and increase strength. Straight wall construction reduces windage and increases efficiency. • Powered by standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor in choice of open or totally enclosed types. Three sizes: ¼, ½ and 1 H.P. with capacities from 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

USED FOR removing dust from grinding, buffing, and polishing equipment, for conveying cotton, wool, saw dust, shavings, etc., for exhausting smoke fumes and vapor, to furnish blast for forges, furnaces, etc., and for cooling and drying purposes.

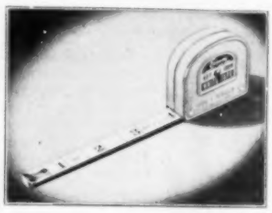
*WRITE FOR LITERATURE AND PRICES*

**Sutton Manufacturing Corp.**
112 W. WILSON AVENUE NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 489 if you write the maker

## GAGE . . Steel measuring tape, 6, 8, 10 ft. lengths in push pull case

Source: EVANS & CO.
55-59 Branford St., Newark 5, N. J.



**Black markings** show on a white background in this new push-pull self-supporting steel tape. The blade is made of carbon steel that has been tempered, Bonderized and coated with baked enamel. The unit pushes into or pulls out from a die-cast case with chromium-plate finish. A brake prevents creeping without rubbing on either tape face. List price is about $1 to $1.50. The width of the case adds just 2 inches to the tape measurement on "inside" applications.

BREVITY—Identify by IEN - 490 if you write the maker

## STEEL . . Wrought stainless particularly for process equipment

Source: CARPENTER STEEL CO.
131-5 Springfield Road, Union, N. J.

| | | |
|---|---|---|
| Nickel | 29.00 | % |
| Chromium | 20.00 | |
| Copper | 3.00 | min. |
| Molybdenum | 2.00 | min. |
| Silicon | 1.00 | |
| Manganese | .75 | |
| Carbon | .07 | |

**New forms** including sheet, plate and clad materials have been added to the company's No. 20 wrought stainless steel, previously described IEN-2390-'48. At that time available forms included bar, strip, pipe, tube and wire. The new sheet stock is available in 24 to 11 gage. The plate ranges from 1/16 to 3/4 in. in thickness. New fabricated products, also available, include forgings, fittings, fastenings, flexible hose, valves, wire cloth, welding electrodes.

**The steel** is resistant to attack by such acids as sulphuric, nitric, formic, acetic. It is resistant also to copper sulphate, lead nitrate, sodium phosphate. It is particularly suited for use in equipment to manufacture and handle heavy and organic chemicals, synthetic rubber, petroleum products, explosives, food products. Technical data are assembled in 18-page Bulletin, "Stainless No. 20."

BREVITY—Identify by IEN - 491 if you write the maker

## LIGHTING . . Magnifying lens for 25 to 100 watt incandescent lamp

Source: LIGHT INTENSIFIER CO.
1523-27 Crane Ave., Detroit 14, Mich.

**List price is $1** for this new magnifying lens and the clips with which it is held in adjustable position on an incandescent lamp. The lens concentrates the light to project a bright spot to assist in illumination at a desk, table, work bench or machine.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 492 if you write the maker

## Quick-freezing Corn-on-the-Cob with Frick Refrigeration

The Frick-Freezer Operates at 30 Deg. Below Zero

The W. E. Bittinger Co. freezes cut sweet corn and corn-on-the-cob, as well as spinach, at its new plant in Hanover, Penna. Its Frick-Freezer handles 30,000 pounds of corn a day; its storages hold 400,000 pounds.

Another example of the effectiveness of Frick low-temperature refrigeration—used also in the world's largest quick-freezing plant.

*For the solution of that particular air conditioning, quick-freezing, ice-making or refrigerating problem of yours, look to*

Four Frick Compressors at Hanover

**FRICK & CO.**
WAYNESBORO, PENNA. U.S.A.
*Also Builders of Power Farming and Sawmill Machinery*

BREVITY—Identify by IEN - 493 if you write the maker

## READY TO TAKE THE "LOAD" OFF YOUR MIND

**BOST-BRONZ** Bearings carry their own lubrication — save money — run quieter and cleaner — are easy to assemble and size. Use them for heavy loads, light loads, static loads, shock loads, high speeds, low speeds.

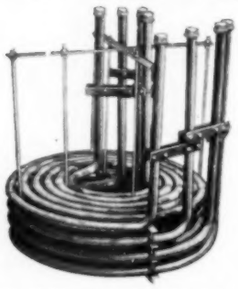
**IN NEARBY STOCK** — 6 types — cylindrical, flange and thrust bearings, cored bar, solid bar and plate stock. Consult Boston Gear Catalog No. 55. Copy mailed on request.

**BOSTON** your stocks are Now

**BOSTON GEAR WORKS**
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 494 if you write the maker

# PITTSBURGH a air pressure tested COILS



*Pipe Coils — Bends — Boiler Tubes*

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers — Welded Ammonia Receivers — Accumulators

**Pittsburgh Pipe Coil & Bending Company**
61 BRIDGE STREET, ETNA, PITTSBURGH 25, PA.

BREVITY—Identify by IEN - 495 if you write the maker

# GOV'T. CONTRACTORS

SPARE PARTS BOXES

CONFORMING TO
Federal Specifications
Military Specifications
Air Force—Navy Aeronautical Specifications
Navy Department Specifications

WRITE FOR FURTHER INFORMATION

**Muckle MANUFACTURING CO.**
OWATONNA, 33 MINN.

BREVITY—Identify by IEN - 496 if you write the maker

## STAINLESS STEEL FLOATS

Your product will be better, will require virtually no maintenance, if it is equipped with Chicago's stainless floats. In fifteen years of making welded stainless steel floats, Chicago Float Works has produced many thousands with excellent results under severe operating conditions. This enviable record assures you of the finest, most dependable floats available to build into your products or for replacement use.

**CHECK THESE FEATURES**

- Standard Diameters 2 to 10".
- Pressures to 1000 lbs.
- Temperatures to 800°F.
- All Standard Spud Connections.
- Top quality 18-8 Stainless Steel.
- Non-corized weld for superior strength, and corrosion resistance available where required.

WRITE FOR FREE CATALOG

**CHICAGO FLOAT WORKS, INC.**
2326 So. Western Avenue • Chicago 8, Illinois

BREVITY—Identify by IEN - 497 if you write the maker

## COLD WEATHER AHEAD, TOO*

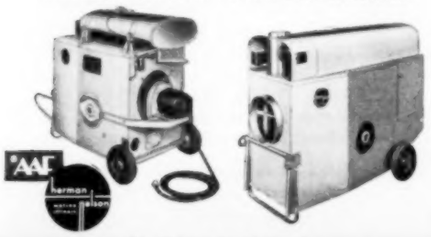
* U. S. Weather Bureau reports show Northern and Central States are still due for this season's lowest temperatures.

There's more severe winter to slow construction jobs for the builder who isn't prepared. You're money ahead when you look ahead to cold days and get a Herman Nelson Portable Heater working for you.

These adaptable units heat, dry, thaw and ventilate without expelling dangerous fumes, smoke and carbon monoxide into enclosed areas. A combustion chamber and stack prevent contamination of air that can cause workmen to become inefficient or ill. Fire hazards are minimized. You get cleaner, safer heat for every fuel dollar.

**MAKE A DEAL** with your nearest Herman Nelson Distributor. For his name, write to Dept. IN-1 at the address below.

**HERMAN NELSON PORTABLE HEATERS**




**HERMAN NELSON DIVISION**
AMERICAN AIR FILTER COMPANY, INC.
Moline, Illinois

BREVITY—Identify by IEN - 499 if you write the maker

## COOLING . . Tube type exchanger to apply on engine lubricating oil

Source: YOUNG RADIATOR CO.
719 Marquette St., Racine, Wis.

**Lubricating oil** from a diesel or gasoline engine is connected to flow through the non-ferrous tube bundle in this new Type A-800 heat exchanger. Cooling water from an outside source or from the engine water jacket is connected to surround the tubes inside the exchanger shell. Headers into which the tubes are secured are designed to provide access for cleaning. Four sizes in the line are 8 in. in shell diameter, 40 to 67 in. in overall length.

BREVITY—Identify by IEN - 500 if you write the maker

## METAL TREATING . . Dip process brightens surfaces of aluminum alloys

Source: KAISER ALUMINUM & CHEMICAL SALES INC.
1922-26 Broadway, Oakland 12, Calif.

**Brightens surface without buffing**

**Bright dip** is a new process on which patents are pending to enhance the surface appearance of aluminum alloys. It is subject to license to aluminum fabricators and processors.

**The process** employs a low-concentration acid bath maintained by periodic addition of active components in small amounts. Products for indoor application can be colored following the dip and anodizing. Dipped products also can be color-lacquered for outdoor uses.

BREVITY—Identify by IEN - 501 if you write the maker

## DUST COLLECTING . . Filter panel with steel frame, replaceable element

Source: GLASFLOSS CORP.
155 E. 44th St., Room 711, New York 17, N. Y.

**Glass fibres** are bonded with a high-temperature resin and are treated with a fire-resistant dust-catching adhesive for use in this new Refill-Type filter panel. The element is held in place with perforated-metal faces in the outer and inner panel frames. An element that has become saturated with dirt can be removed, discarded and replaced with a new one in a few minutes without need for tools.

**Four standard sizes**, all 2 in. in thickness measure 16 by 20 in. to 20 by 25 inches. Rated capacity is 640 to 1,000 cfm. of air-flow rate when clean.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 502 if you write the maker

Appleton Separable Standard Dome Reflector. Need is easily detached for cleaning or servicing without disconnecting wires. Weatherproof.

**MORE for every Lighting Dollar!**

## APPLETON LIGHTING EQUIPMENT

Appleton Lighting Equipment is scientifically designed to provide maximum lighting efficiency at minimum installation, service and operating expense.

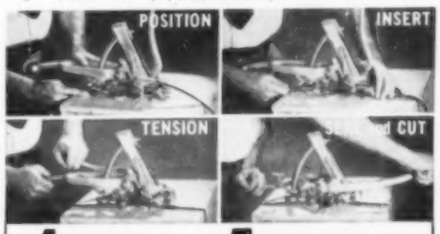
Including hundreds of types and sizes, the Appleton Line contains a fixture to fit virtually every lighting requirement, whether indoors or out. Get the most from your lighting dollar. Specify Appleton. STANDARD FOR BETTER LIGHTING.

*Write for complete Catalog information*

**APPLETON ELECTRIC CO.**
1716 Wellington Ave., Chicago, Ill.
*Branches and Resident Representatives in all Principal Mkts.*

**APPLETON**
CONDUIT FITTINGS · LIGHTING EQUIPMENT · OUTLET AND SWITCH BOXES
EXPLOSION PROOF FITTINGS · RECEPTACLES

BREVITY—Identify by IEN - 503 if you write the maker




## 4 STEPS . . . 5 SECONDS

*with the Improved*

**STANLEY ACE STRAPPING TOOL**

● Puts strapping on a production basis! Even a beginner can make time with it. Magazine holds 100 seals—is easily loaded and seals in any position. The "Ace" comes in three sizes to handle ¼", ½" and ⅝" strapping. Put this production tool to work for you. Write for information or ask for demonstration. The Stanley Works, Steel Strapping Division, 143 Lake St., New Britain, Conn.

STEEL STRAPPING AND CAR BANDING SYSTEMS

**STANLEY**
Reg. U. S. Pat. Off.
HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 504 if you write the maker

The MHS Junior Monoveyor provides a means of handling light and medium loads overhead more effectively and more economically than with the standard conventional overhead conveyor. It may be laid out to meet any specific manufacturing, transportation or storage requirements where loads and distances are appropriate.

It is constructed of standardized precision made components, mass produced for maximum economy. The selection of these components is sufficiently wide to permit full flexibility.

Line friction has been reduced. Inclines may be steeper and minimum allowable radii are substantially less than they are with the standard conventional overhead conveyor.

For details and specifications, write for Bulletin JM-1.

**Mechanical Handling** *Systems, Inc.*
4605 NANCY AVE. • DETROIT 12, MICH.
*Offices in Principal Cities*

BREVITY—Identify by IEN - 505 if you write the maker

## ROPER ROTARY PUMPS

*The Name of Dependability*

**Widely Used in Diversified Industries**

Whether your equipment is dependent upon a pump for fuel transfer, coolant work, or hydraulic action, you will maintain greater operating efficiency with the rugged Roper — Series F. This series is built to pump clean liquids of all kinds, and is available in standard or special-built designs in 1 to 300 g.p.m. . . . pressures to 300 p.s.i. WRITE TODAY for Catalog and Complete Information.

**GEO. D. ROPER CORP.**
201 Blackhawk Park Ave.
Rockford • Illinois

**ROPER** *Rotary Pumps*

BREVITY—Identify by IEN - 506 if you write the maker

# FASTER DRAFTING

Actual tests prove that a Bruning machine can increase drafting speed by 40%. T-square, straightedge, triangles, protractor and scales are combined in one precision instrument. It eliminates time wasted in picking up and laying down tools, and makes accuracy both easy and *automatic!*

"Equipoise" models have the best gravity compensator ever devised for inclined board use. Touch Control Indexing is another exclusive Bruning feature.

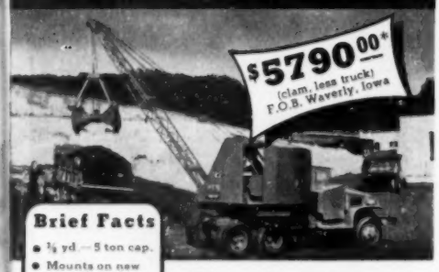
**FREE BOOKLET** — Write today for 20-page booklet, "Bruning Drafting Machines." Charles Bruning Company, Inc., Dept. H-11, 100 Reade Street, New York 13, New York.

## BRUNING DRAFTERS

BREVITY—Identify by IEN - 507 if you write the maker

# Save with a BANTAM

loads materials...digs holes...cuts trenches




**Brief Facts**

- ⅜ yd.—5 ton cap.
- Mounts on new or used truck
- Handles 50' boom, 29" magnet, multiple attachments
- JOB-PROVED — nearly 2000 Bantams in use, nation-wide distributor service

*Clip this ad now!*

Mail today with your letterhead for complete details showing how you can speed work, cut costs, with a truck-mounted BANTAM crane. Schield Bantam Co., 254 Park St., Waverly, Iowa.

*Price subject to change without notice

## SCHIELD BANTAM

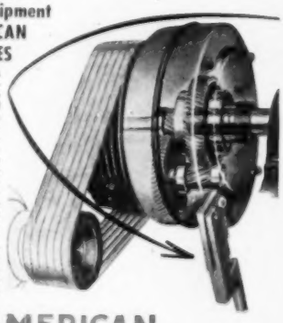
*Costs less . . . travels 35 m.p.h.*
*GETS MORE JOBS DONE*

BREVITY—Identify by IEN - 508 if you write the maker

# NEW OVERLOAD RELEASE

**Provides Instantaneous Protection for Equipment Driven by AMERICAN REDUCTION DRIVES**

The American torque-arm Overload Release provides another exclusive advantage for users of American Reduction Drives. It is a simple, foolproof device which automatically and instantaneously disengages the torque-arm from the reduction unit upon sudden shock loads or jamming condition. The Release is easily reset without tools and continues to provide the same overload protection indefinitely. Write for complete information on this simple protective device for use with American Reduction Drives.



MAIL TODAY!

AMERICAN REDUCTION DRIVES

*The American Pulley Company* 4242 Wissahickon Ave., Phila. 29, Pa.

Please send me complete information on the exclusive American torque-arm Overload Release for use with American Reduction Drives.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 509 if you write the maker

## CLEANING . . Washing machines, brush type for glassware and utensils

**Source: SOUTHERN CROSS MFG. CORP.**
**1023-27 Connecticut Ave., Washington 6, D. C.**

**Model 1582** designates the company's recently improved glassware washing machine, shown to the left in the illustration, when it is equipped with brushes for laboratory use. The machine is driven by a ¼-hp. universal motor. It is made of stainless steel and mounts above a sink. The brushes are nylon-bristle Fuller units, interchangeable in a number of shapes and sizes for given purposes. Rotation is at 1,300 rpm. Overall dimensions are about 14 by 13 by 11 inches.

**Companion machine,** shown to the right, is designed for use on utensils. It mounts at the back of a sink, employs a universal motor to drive a brush-equipped flexible shaft. The brush is interchangeable as in the glassware machine and mounts nylon bristles. Both machines operate dry so far as they themselves are concerned. Washing soaps and water are applied in the sink and then the scrubbing action does the cleaning job prior to rinsing and final brushing.

BREVITY—Identify by IEN - 510 if you write the maker

## EXPANDING . . Positioning collars to locate tubes in a heat exchanger

**Source: FRANKLIN MFG. CO.**
**147½ S. Fourth St., Philadelphia 6, Pa.**

**Three new collars** have been developed for application with the company's tube expander to locate tubes with reference to a tube-sheet face and to hold them against turning in the sheet when the expanding tool is operated. One design has a deep recess that clears the tube end and permits "bottoming" the collar and thereby positioning the expander independent of the amount of tube projection.

**The second design** provides a knurled face $\frac{1}{16}$ in. recessed from the collar end. This permits a $\frac{1}{16}$-in. tube extension. At the same time the knurling bites into the tube end and prevents rotation of the tube in the sheet. The third also is knurled, this time flush with its end, to position and hold tubes flush with the face of the tube sheet.

**List price** for any of the three designs is $5.75. Stock sizes range from ¼ to 1¼ in. based on the outside tube diameter. The expanding tool is available in a range of sizes from ¼ to 20 in. overall. The company also manufactures an electronic expander control that stops the action when the tube has been expanded to a predetermined tightness in the tube sheet.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 511 if you write the maker

# Perfectly SM-O-O-O-TH

Control of D-C Motors operating on A-C Lines

This compact, lightweight, easily mounted motor speed control is the perfect means for controlling d-c motors from a-c lines. With it you can practically instantaneously start, stop or reverse a motor up to 1/20th h.p. in size. Any standard motor can be used . . . no derating is necessary. The Type 1701 VARIAC* Motor Control gives perfectly smooth variation in speed over a range of 30 to one. The very low torque pulsation and the extra-good speed regulation provided with these controls offer many possibilities of greatly improved operation of d-c motor-driven devices in Industry. Let us tell you how.

*Write for* VARIAC SPEED CONTROL *Bulletin,*

**GENERAL RADIO COMPANY** Cambridge 39 Massachusetts

90 West Street NEW YORK 6 — 920 S. Michigan Ave. CHICAGO — 1000 N. Seward St. LOS ANGELES

BREVITY—Identify by IEN - 512 if you write the maker

# SAFETYMIX

**EXTRA SHOWER SAFETY ...at no extra cost**

**PROTECTS AGAINST SUDDEN SCALDS**

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

**HOLDS SHOWER TEMPERATURE CONSTANT**

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

**LIFETIME SHOWER VALVE**

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

**GET FREEDOM FROM COSTLY MAINTENANCE**

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

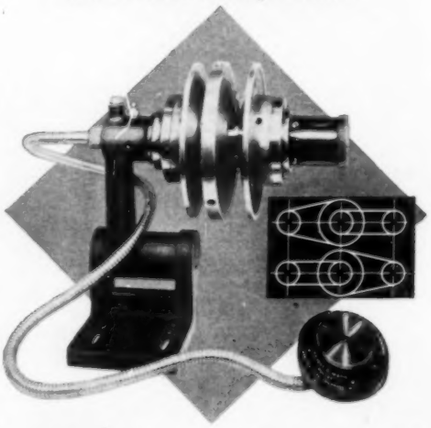
**Symmons ENGINEERING COMPANY**
791 TREMONT ST., BOSTON 18, MASS.

BREVITY—Identify by IEN - 513 if you write the maker

# new!

## ADJUST-O-MATIC Variable Speed Pulleys

**Give Infinitely Variable Speed Ratio**
**Maintain Setting Indefinitely**
**Can Be Used in Any Position**



**INFINITELY VARIABLE** — Adjust-O-Matic Pulleys provide infinitely variable speed, step up or step down, with a simple turn of the knob.

**REMOTE CONTROL** — Adjust-O-Matic Pulleys can be supplied with remote control (shown), or with integral dial and knob on hub.

**2 SPEED RATIOS** — Adjust-O-Matic Pulleys are made in 2-to-1 or 3-to-1 maximum ratio, depending on power transmitted.

**To Increase Performance**

Design Adjust-O-Matics into your new machines
Install Adjust-O-Matics on your present equipment

*See for yourself* how simple Adjust-O-Matic pulleys are to use—write for this folder today!

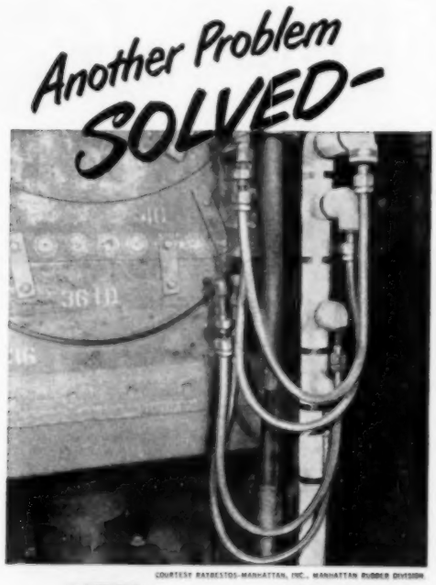
**AMERICAN TYPE FOUNDERS** ATF
200 Elmora Avenue, Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 515 If you write the maker

Output of machined parts is speeded up without sacrifice of accuracy with a Super-Spacer. This indexing fixture allows rigid control of the machining operation, yet saves expensive setup time on long or short runs. Send for Bulletin S-101.

HARTFORD Special — THE HARTFORD SPECIAL MACHINERY CO. HARTFORD 12, CONN.

BREVITY—Identify by IEN - 516 If you write the maker




COURTESY RAYBESTOS-MANHATTAN, INC., MANHATTAN RUBBER DIVISION

# Bendix

## Eclipse Flexible Metal Hose

**THE PERFECT CONVEYOR WHENEVER PRESSURE, FLEXING AND TEMPERATURE COMBINE!**

To this hydraulically operated platen press, Bendix Flexible Metal Hose* alternately carries steam at 150 psi to form brake lining material in a die, and then conveys cooling water to fix the lining in its heated form. The base of the press drops approximately 14" to allow the formed piece to be removed. Bendix Flexible Metal Hose was selected for its ability to withstand these conditions of varying temperature and repeated flexing. If you have a similar problem, write today and let our engineers help you solve it.

**Engineered to your requirements in 85-15 bronze, SAE 1010 carbon steel, stainless steel, Monel, beryllium copper, cupro nickel and other special alloys.*

LOOK FOR THE MARK OF QUALITY

ECLIPSE-PIONEER DIVISION
BENDIX AVIATION CORPORATION
TETERBORO, NEW JERSEY
Bendix AVIATION CORPORATION
Canadian Representative, The Holden Co., Ltd., 614 St. James Street, West Montreal 3, Canada

BREVITY—Identify by IEN - 518 If you write the maker

## KNURLING . . Hand tool adjusts from 3/32 to 3/4 in. diameter

**Source: WADE TOOL CO.**
**55 River St., Waltham 54, Mass.**

**List price** is $9.25 for this new knurling tool and one set of three knurls. A wood carrying case with space to store additional knurls adds $2.50. The tool is made up of a case-hardened forged-steel frame, bearings for two stationary-position knurls and a screw head to adjust the third knurl. The knurls measure ½ by $\frac{3}{16}$ inch. They can be set to finish a narrow band or to feed along the work for a required distance.

BREVITY—Identify by IEN - 519 If you write the maker

## ASSEMBLING . . Self-adhesive tapes for riveting and to assemble Plexiglas

**Source: MINNESOTA MINING & MFG. CO.**
**902 Fauquier St., St. Paul 6, Minn.**

**No.** 775 and No. 670 are two new self-adhesive tapes designed respectively to hold rivets in place prior to driving and to mask against the spread of solvents employed in assembling Plexiglas sheet and plate materials as in aircraft. The tape for riveting is made in ¾ and 1-in. widths and is supplied in rolls holding 108 feet. The masking tape is ½, ¾, 1 and 2 in. in width by 216 ft. in length.

BREVITY—Identify by IEN - 520 If you write the maker

## MARKING . . Steel hand stamp from stock with standardized wordings

**Source: QUALITY DIE CO.**
**9305 S. Baltimore Ave., Chicago 17, Ill.**

**"Ketos"** signifying a certain oil hardening steel, "Pat. Pend." "Oil Here," "Front," "Swede Oil," are representative of the markings that can be ordered from the company's new stock line of steel hand stamps.

**Each stamp** is 3½ in. in length, carries 3/32-in. characters to a maximum of ten. Each is identified on the face and side and has a hole in the shank to hang up or assemble on a ring. Single units and sets are available, each set of ten or more being supplied with a ring, case, bench box or chain.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 521 If you write the maker

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability • 17 sizes from 20 to 500 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

*For complete details write for catalog 217.*

Superior STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES, Inc.
*Factory: Emmaus, Pa.*
*Executive Offices: Times Building, Times Square, New York 18, N. Y.*

BREVITY—Identify by IEN - 522 If you write the maker

Converts easily to clamshell, dragline, magnet, shovel, trench hoe or pile driver.

Fast, one-man operation — works easily in tight spots.

Wayne Crane users are our "best salesmen." Sales and service in all industrial cities. Write or write for specifications and prices. You'll like both.

WAYNE CRANE DIVISION, AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1, INDIANA
*Manufacturers of Material Handling Equipment Since 1905*

BREVITY—Identify by IEN - 523 If you write the maker

NORTON COMPANY • WORCESTER 6, MASS.
Distributors In All Principal Cities

BREVITY—Identify by IEN - 524 If you write the maker

# WHITNEY CHAIN

***Takes the Problem out of your Power Drive Designs***

Because Whitney Chains are extremely flexible and adaptable to a wide variety of designs, they meet practically all transmission requirements. Their positive grip delivers full power without slippage . . . assures uniform speeds. Their rugged construction and hardened-alloy-steel parts provide maximum service with low maintenance. Investigate Whitney Chains and Cut Tooth Sprockets . . . the *all steel drives* for your designs and equipment. Write:

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 525 if you write the maker

**Milwaukee HOLE-SHOOTER**
with exclusive split-body design
Its electrical parts can be inspected, cleaned and adjusted while in operation

NOW USED by LEADING INDUSTRIES for PRODUCTION and MAINTENANCE

In less than two years, the new "A" series of Milwaukee HOLE-SHOOTERS has been adopted as "standard-equipment" by many of America's largest portable-tool users. Its acceptance for heavy-duty service is phenomenal. Wt. 3¼ to 4¼ lbs. Capacities and speeds: ¼" — 2000, 3500 and 5000 R.P.M.; 5/16" — 1000 R.P.M.; ½" — 650 R.P.M. Ball and roller bearings. Metco-built super-power motor, 115 V. AC or DC. Priced, $39.50 to $46.00. See your distributor or write us for Folder 113.

**Milwaukee QUALITY TOOLS**

MILWAUKEE ELECTRIC TOOL CORP., 5360 W. STATE ST., MILWAUKEE 8, WIS.

BREVITY—Identify by IEN - 526 if you write the maker

**INCREASES TAP LIFE**
*by Guided Accuracy*

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

$20.50 POSTPAID

**H. D. HERDER** TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 527 if you write the maker

**For perfect packaging**
RELY ON
*BRAINARD*
STRAPPING SYSTEM

Proper packaging is important. Like the pod to the pea . . . packaging should be protective . . . yet compact and light. Proper packaging should allow the ultimate consumer easy accessibility to the goods . . . and proper packaging should be applied simply and quickly. If you are not getting this kind of packaging you need the Brainard Strapping System. Write today —

BRAINARD STRAPPING SYSTEM

STRAPPING DIVISION
BRAINARD STEEL COMPANY
3151 LARCHMONT AVE., WARREN, OHIO

Name
Address
City State

## For Your Special Information

BREVITY—Identify by IEN - 528 if you write the maker

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

**THOMAS' REGISTER . . 1951 edition lists all products and their makers**

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

**The three books illustrated**, with a fourth, not shown, that contains a complete finding index, comprise the 8,000-page Thomas' Register to which we refer in the footnote at the bottom of the editorial columns in Industrial Equipment News. We have reproduced that footnote for emphasis at the top of this "page-50" column with our announcement that the 1951 edition is now coming from the presses and is available. Literally the footnote statement is true in application to the complete Register.

**You can make quick reference** to those of the approximate 100,000 United States manufacturers who make any product you can think of, if you have the set of books at your desk. You can find the addresses, the size ratings or the companies, with description and advertising defining the particular characteristics of each product under 85,000 classifications.

**Trade names are included** in a separate section, thousands of them, all in alphabetical order with the name of the company owning each and the company address. In this same section is an alphabetical list with addresses, ratings, affiliations, branches and, in some cases, executive personnel of the principal manufacturers in the United States.

**List price** for the set of books is $15, plus transportation charges. You can make reservation now for billing later by writing to Mr. W. C. Scoltock, Circulation Manager, at the address given at the start of this item. Or, if you prefer, check the IEN number on your Reader Service form and he will send you a reservation form to fill in.

*Happy New Year*

BREVITY—Identify by IEN - 529 if you write the maker

**CHIKSAN**
HIGH TEMPERATURE
(Chevron Packing)
BALL-BEARING SWIVEL JOINTS

Widely used for handling acids and other highly corrosive liquids and gases under pressures to 700 psi. and temperatures to 500° F. Eight different styles in sizes from ⅜" to 4". Easy 360° turning on stainless steel balls in flame-hardened races.

There is a CHIKSAN Swivel Joint for every need

CHIKSAN COMPANY
AND SUBSIDIARY COMPANIES
Chicago 3, Ill. BREA, CALIFORNIA Newark 2, N. J.
WELL EQUIPMENT MFG. CORP. HOUSTON 1, TEXAS
CHIKSAN EXPORT CO. BREA CALIFORNIA NEWARK 2, N. J.

BALL-BEARING SWIVEL JOINTS FOR ALL PURPOSES

BREVITY—Identify by IEN - 530 if you write the maker

**NEW TRANSFER PUMP EMPTIES FULL-SIZE DRUM IN 3 MINUTES!***

Capacity...18 GPM*
Weight . . . 15 lbs.
Air operated

Graco's new, low-cost *Fast-Flo* Pump does the work of heavy, hard-to-handle transfer pumps that cost *many times more!*

Weighing only 15 lbs., *Fast-Flo* is easily handled by one man. Graco's *Fast-Flo* transfers fluids and semi-fluids from original containers without spilling a drop, and does it in a fraction of the time formerly required. Eliminates many jobs ordinarily done by hand, saves valuable production time. Fits all drums with 2" openings.

For speedier, easier transfer of fluids, get a Graco *Fast-Flo*. For paints, thinners, lubricants, coolants, alcohols, naphthas, adhesives, non-corrosive chemicals and many others.

Contact your jobber . . . or write direct.

*No. 20 lubricating oil, 150 lbs. air pressure.

GRAY COMPANY, INC.
16 Graco Square Minneapolis 13, Minn.

**GRACO** FAST-FLO PUMP

BREVITY—Identify by IEN - 531 if you write the maker

**DRIPRINT**
TRADE MARK
For *Better* Prints

**The *Better* Dry-Developed Paper**

If you are a user of direct positive prints produced by ammonia vapor development, or are interested in adopting this process, be sure to try Dietzgen's DriPrint, the *better* dry-developed paper, and *see* the difference. May be used with any make of high-speed printing and developing equipment. Superior contrast, firm full-bodied lines with clear white backgrounds . . . reliable uniformity . . . time-saving speed . . . these desirable features have made Dietzgen's DriPrint the specified choice of thousands of discriminating print users. A better paper at no extra cost. Available in cut sheets or rolls. Ask your Dietzgen dealer or nearest Dietzgen office for a demonstration.

EUGENE DIETZGEN CO.
Chicago • New York • San Francisco • New Orleans
Pittsburgh • Los Angeles • Philadelphia
Washington • Milwaukee
*Dealers in All Principal Cities*

DIETZGEN
DRAFTING, SURVEYING & PRINT-MAKING MATERIALS, INSTRUMENTS & EQUIPMENT

BREVITY—Identify by IEN - 533 if you write the maker

• One of the finest motor engineering staffs can be your motor department when you call on Peerless Electric.

Peerless private air service—a Beechcraft Bonanza—can carry one of our sales engineers to see you on reasonably short notice, if necessary. He'll get to your problem quickly—right at your desk with your own designers—ready to work out the toughest motor problem.

Peerless Electric motor engineering, noted for dependability and versatility since 1893, is as progressive as the modern age, and now, more than ever, available as the motor department of your business.

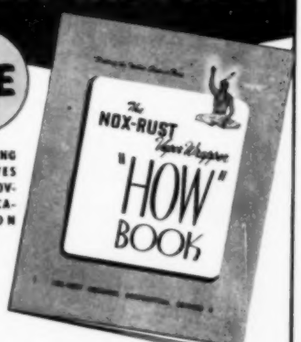
**THE PEERLESS ELECTRIC CO., WARREN, OHIO**
*Manufacturers of Quality Motors Since 1893*
Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

**Peerless-Electric** MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 534 if you write the maker

# JUST OFF THE PRESS

**FREE**




FREE! FOLDER LISTING RUST-PREVENTIVES CONFORMING TO GOVERNMENT SPECIFICATIONS. FREE ON REQUEST.

Save man-hours in handling costs! Prevent rust and corrosion! Read this remarkable book, packed with case histories. See how firms like International Harvester, Caterpillar Tractor and many others cut costs with the new NOX-RUST VAPOR WRAPPER. Read about this new method of packaging that delivers parts and equipment *FACTORY FRESH!* Send for your free copy of the new VAPOR WRAPPER "HOW" BOOK today.

**NOX-RUST CHEMICAL CORPORATION**
*"Industry's Rust-Prevention Headquarters"*
2427 SOUTH HALSTED STREET—CHICAGO, ILLINOIS

BREVITY—Identify by IEN - 535 if you write the maker

**EXTENDS TO ANY DESIRED HEIGHT IN A FEW MINUTES**
• Always Ready for Work
• No Erection Required
• No Loose Parts

## HI-LIFT EXTENSION SCAFFOLD

HI-LIFT Extension Scaffolds can be extended from a six-foot ladder to a 30-foot scaffold in less than 5 minutes . . . hand or electrically operated. Comes to you ready for work—no erection required, no loose parts. Built to meet individual requirements. Ideal for Painting, Lighting, Cleaning, and all overhead maintenance. Pays for itself in time and labor saving.

*Also makers of*
HI-LIFT MARQUEE SERVICER
ATLAS ONE-MAN TRUCK LOADER

*Write for Full Information*

**ATLAS INDUSTRIAL CORP.**
847 39th Street, Brooklyn 32, N. Y.

BREVITY—Identify by IEN - 536 if you write the maker

## FURNITURE . . Portable work bench brings light, parts, tools to the job

**Source:** SNAP-ON TOOLS INC.
8030 28th Ave., Kenosha, Wis.

**Roll-Cab** is a new work bench on wheels with tool and parts drawers and shelves and a light, a vise and a motor-driven grinder on the top. A foot-operated floor lock holds the bench in working position. The unit is made of steel with top dimensions at 45 by 24 inches. The steel top plate measures $\frac{3}{16}$ in. in thickness and is faced with Masonite. Height is 36½ inches. Finish is baked red enamel. Weight is 388 pounds.

BREVITY—Identify by IEN - 537 if you write the maker

## LUBRICATING . . Compounded oils to assist in metal cutting operations

**Source:** GARLOCK PACKING CO.
50 Garlock St., Palmyra, N. Y.

**Available in 1 and 2 lb. cans**

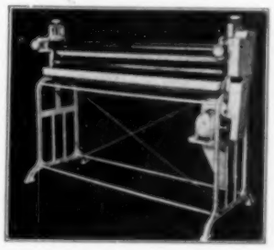
**Tapping Compound** designates a new sterile blend of fatty and mineral oils for use in small quantities by brush or oil can for threading, drilling, boring, broaching, and other machining and press cutting operations. It is suited also for use in press fitting and to lubricate lathe centers. It is not intended for application as a regular coolant for circulation.

**Application** minimizes turning torque, permits fast operation without danger of tool breaking or work spoilage, particularly in machining tool and stainless steels.

BREVITY—Identify by IEN - 538 if you write the maker

## SPREADING . . Roller coating machine for paint, lacquer, oil, adhesives

**Source:** L. R. WALLACE & CO.
438-42 Seaton St., Los Angeles 13, Calif.

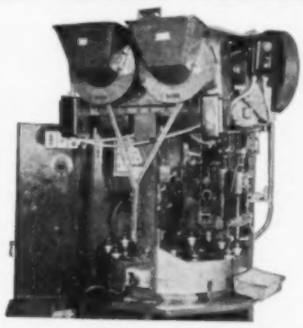


**Strong Speed** Coater is a new motor-driven machine to take flat work to 50 in. in width and to 1½ in. in thickness. Operation is at 67 fpm. to coat on side or both as specified. The machine mounts neoprene rolls measuring 4 in. in diameter. Drip-proof end plates confine the liquid. Coating thickness can be controlled for coverage to 850 sq. ft. per gal. as an approximate maximum.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 539 if you write the maker

# These KRAUS HOPPERS



## Save $45.00 per day!

Four Kraus Hoppers applied to Sciaky Welder to feed two sizes of two different pieces, actually save $45.00 per day for one manufacturer of electrical equipment. A metal housing is inserted manually and assembly and ejection are completely automatic. This saving is typical where Kraus Hoppers are used. Every Kraus Hopper is specifically designed to handle the particular job to which it is applied. For complete information on adapting this dollar saving equipment to your process, send sample parts, with orientation and delivery requirements to

**KRAUS DESIGN INC.**
948 EXCHANGE ST. • ROCHESTER 8, N. Y.

BREVITY—Identify by IEN - 540 if you write the maker

● If your present product development plans involve the accurate control of temperatures or pressures, bring your problems to Fulton Sylphon engineers.

We specialize in designing and developing bellows assemblies and devices to meet specific needs . . . in practically all industries.

44 years' experience. Complete engineering service and production facilities. Catalog AN-1200 gives complete information.

**FULTON SYLPHON Div.**
FIRST WITH BELLOWS
Temperature Controls • Bellows Devices • Bellows Assemblies
THE ROBERTSHAW-FULTON CONTROLS CO. • KNOXVILLE 4, TENN.
*Canadian Representatives, Darling Brothers, Montreal*

BREVITY—Identify by IEN - 541 if you write the maker

# Rolling Steel Doors

***Manually • Mechanically • Power Operated***

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

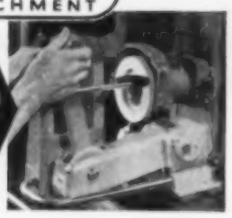
**MAHON**

BREVITY—Identify by IEN - 542 if you write the maker

**PRATT & WHITNEY**

**Diaform** WHEEL FORMING ATTACHMENT

SIMPLY SET IT UP ON TABLE OR CHUCK OF YOUR TOOLROOM SURFACE GRINDER — to form wheels accurately. No altering of grinder required!



DIAFORM — Pratt & Whitney's answer to the need for an inexpensive tool for the precision forming of grinding wheels — is one of the most effective time and money savers in the shop. Just mount it on your toolroom surface grinder *without altering the machine in any way*, and you're all set to form and re-form-contours of grinding wheels up to 10" dia. x 1" width. By simply following the contour of an inexpensive template with a tracer point, you'll do a precision job of it — *to an accuracy of .0005" — in a matter of minutes!* Get details from any P & W Branch Office . . .

PRATT & WHITNEY
Division Niles-Bement-Pond Company
WEST HARTFORD 1, CONN.

Birmingham • Boston • Chicago
Cincinnati • Cleveland • Detroit
Los Angeles • New York • Philadelphia
Pittsburgh • Rochester • St. Louis
San Francisco

BREVITY—Identify by IEN - 543 if you write the maker

# Spray Gear Coatings the fast, safe way!

Spraying gears with Alemite Versatal equipment cuts downtime—saves up to 95% on materials alone by eliminating over-lubrication. Extension spray head permits operator to spray gears from a *safe* distance—right while the machine is running.

**FREE**—a book of ideas on how Alemite *Versatal* Equipment can help solve your material handling problems. Address your request to Alemite, Dept. B-11 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal

*Another Product of Stewart-Warner*

BREVITY—Identify by IEN - 544 if you write the maker

# Now Available for Oil Hardening

## Brown & Sharpe Ground Flat Stock *in entire range of thicknesses*

Now you have a choice of oil or water hardening steel in 16 different thicknesses from 1/64" to 1" in this accurately ground flat stock. In the 8 thicknesses up to and including 3/16", a single type of ground flat stock serves for hardening in either oil or water.

With increased range of stock, 145 sizes in all, you can meet a wide variety of requirements where pre-ground flat stock offers many advantages. Write for new folder. Brown & Sharpe Mfg. Co., Providence 1, R.I., U.S.A.

*We urge buying through the Distributor*

BROWN & SHARPE BS

BREVITY—Identify by IEN - 545 if you write the maker

# Can your product use this advantage?

MORE DEPENDABLE POWER

**Then it will pay you to investigate POWER PRODUCTS engines**

Illustrated: Model 300 Deluxe Horizontal 2 cycle opposed "Twin" cylinder engine. Complete range of sizes in both vertical and horizontal engines available.

*Authorized service and factory parts available nationally. It will pay you to investigate Power Products Engines. Engineering service includes modifying engines within design limits to suit your requirements.*

You know the importance of dependable power for your product. Power Product's advanced two cycle design results in thoroughly dependable operation, smooth vibration free performance, positive mist-type lubrication and simple maintenance. In addition extra high voltage magnetos and full carburetion mean easier starting.

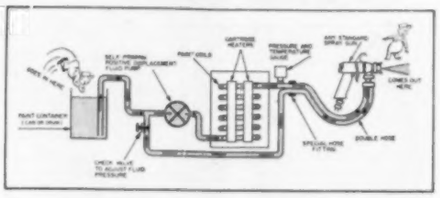
*Write* for full information and specifications to Dept. J-1

POWER PRODUCTS CORPORATION
GRAFTON, WISCONSIN

BREVITY—Identify by IEN - 546 if you write the maker

# PAINTING . . Fluid pump and heater delivers paint and air to spray guns

**Source: BEDE PRODUCTS INC.**
**4309-13 Ridge Road, Cleveland 9, Ohio**



**Double Unit** designates new double-heater assembly in the company's line of heating and circulating equipment for handling paint and atomizing air to one or more spray guns. The new heater assembles two of the standard single-element electric units with a circulating pump to provide a rating of about 26 gph. based on the paint circulated.

**Heating capacity** is for a 100-deg. F. temperature rise in the paint and for a 50-deg. F. rise in the air, both as delivered at the guns. Overall dimensions of the double assembly are 30 by 20 by 16 inches. The heater load is 4 kw. from a 220-volt single-phase ac. line. Weight is 120 pounds.

**Paint** can be connected from an original container to the vane-type pump which is driven by a pneumatic motor. The pump moves the paint, including the fresh makeup and the portion recirculated, through a coil in the aluminum heating-element assembly. The coil surrounds electric cartridge elements connecting through a thermostat to heat the paint prior to delivery through the circulating hose lines to and from the gun or guns. Compressed air is connected to a second coil outside the paint coil for hot-air delivery to the guns through a separate hose line.

**Bulletin**, 8 pages, "Bede Paint Heaters," presents illustrated descriptions of the five heater models in the line with data on characteristics of heated paint and air for production paint spraying with the company's equipment.

BREVITY—Identify by IEN - 547 if you write the maker

# GAGE . . Dial indicator graduated to plus and minus .005 inch

**Source: CHICAGO DIAL INDICATOR CO.**
**178-82 N. Wacker Drive, Chicago 6, Ill.**

**No. 145F** is a new unit in the company's Geneva lever-action line. It carries graduations reading .0001 in. to a plus and minus reading of .005 inch. It can be rotated through six complete turns for an overall range of .060 inch. The cast-brass case measures 2 by ½ in. and is fitted with a nonbreakable plastic crystal. The back is equipped with a plain cover and one contact point is supplied at a list price of $25. A back taking a ball joint and the required fittings for universal positioning can be specified. An internal lock is provided for fine settings. The dial can be rotated for zero positioning.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 548 if you write the maker

# MERRILL LIFTING CLAMPS

**THE HEAVIER THE LOAD THE TIGHTER THE GRIP!**

Safer and Speedier Lifting at Less Cost...have made MERRILL-Velz LIFTING CLAMPS the choice of large Steel Mills everywhere.

**SAFER**
- Safety factor of 5 to 1.
- Factory tested at double rated capacity.

**GREATER SPEED AT LESS COST**
- Entirely Drop Forged and Heat Treated.
- Working parts entirely enclosed.
- Pins do not rotate in frame eliminating wear.

Available in Stainless Steel.

In Four Sizes
½ ton - 1 ton - 3 tons - 6 tons

**MERRILL BROTHERS**
56-14 ARNOLD AVENUE
MASPETH, N. Y.

Producers of DROP FORGED SHACKLES, CLEVIS NUTS, TURNBUCKLES & EYE BOLTS.

BREVITY—Identify by IEN - 549 if you write the maker

# 5=15

## SEE HOW YOU SAVE with the versatile New Rotor Chippers

USERS of the New Rotor "Multi-Power" Chipping Hammers are enthusiastic about them because they give these top values:

**3 MODELS IN 1.** By a simple change of parts, you can adapt each of the 5 basic models to serve as 3 hammers to match your job: (1) A "regular" model, (2) A "super-speed" model, (3) A "super-sock" model.

**LIGHTER WEIGHT.** These new Rotor Chippers average 1½ to 2 lbs. lighter than other chippers making them easier to handle.

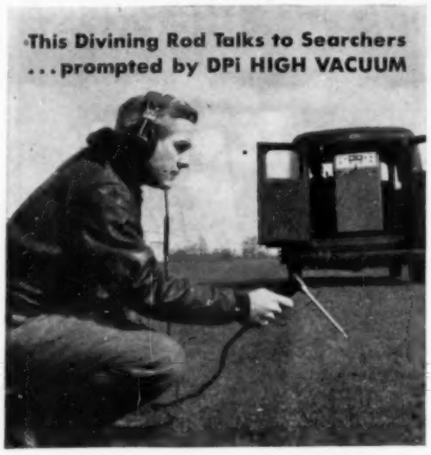
**SHORTER.** Exclusive "doughnut" valve makes possible saving of 1" to 2" in length, making it easier to get into those tough, crowded corners.

**FASTER CUTTING.** You get more blows per minute . . . because of new exclusive design.

Get all the facts. Write for catalogue No. 37. **AIR O'TOOL**

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 550 if you write the maker




*For locating and measuring leaks wherever pressure or vacuum is used*

THE CONSOLIDATED MODEL 24-101A

# LEAK DETECTOR

TO prove absence of any leak, or to detect, locate, and measure rate of leakage in pressure or high vacuum systems, glass to metal seals in electronic equipment, valves, welded or soldered joints—these are only a few of many uses for this versatile instrument.

Employing helium gas and the mass spectrometer principle, this highly sensitive machine responds to leak rates, from atmosphere into an evacuated system, as low as $10^{-9}$ cubic centimeters per second.

Ruggedly built and mounted on casters for portability, the unit can be moved anywhere for testing systems by "probe" or "envelope" methods, or locating leaks in buried gas lines.

Both visual and audible indicators are standard features on the Model 24-101A.

**SEND FOR FREE BULLETIN**

16-page bulletin describes the many features of the Consolidated Model 24-101A Leak Detector, explains applications and methods, and gives complete specifications. For your free copy write

DPi

VACUUM EQUIPMENT DEPARTMENT
DISTILLATION PRODUCTS *industries*
761 Ridge Road West, Rochester 3, N. Y.
DIVISION OF EASTMAN KODAK COMPANY

BREVITY—Identify by IEN - 552 If you write the maker

## Backstand Method Saves Time!

**Le Roi Co. cuts finishing time on forged handle from 5 minutes 11 seconds to 1 minute 32 seconds!**

**Problem:** The Le Roi Company, in Cleveland, Ohio, used set-up wheels to finish forged paving breaker handles. This finishing operation required 5 minutes 11 seconds on the average for each handle . . . was too long and too costly.

**Solution:** The Le Roi Company switched from the set-up wheel to the backstand belt for this finishing job.

**Result:** An Armour abrasive belt was used and finishing time was reduced to 1 minute 32 seconds per forged handle . . . *saving 3 minutes 39 seconds for each handle!*

If you are grinding, polishing or finishing flat or contoured surfaces, cast pieces, stamped pieces or forged pieces, the backstand belt method can help you. Write today for our free booklet, "Facts about Backstand Belt Grinding and Polishing."

**We recommend buying through your industrial distributor**

**ARMOUR** *Coated Abrasives Division*

Armour and Company • North Benton Road • Alliance, O.

BREVITY—Identify by IEN - 553 If you write the maker

it's here...

## The NEW, REVOLUTIONARY Collapsible "PHIL-BOX"

**Collapses from 28⅞" to 9 1/16" in Height**

Sides are collapsed and placed in upright position . . . in less than 20 seconds!

MODEL B 20

The new Phillips collapsible 2000 lb. capacity material handling "Phil-Box" is designed for saving space in storing and transporting bulk materials and parts. Quickly and easily collapsed or erected, the box interior measures 49" x 37" x 24". The "Phil-Box" has no pins or loose parts. Made of heavy gauge corrugated steel, it is of all welded construction—with smooth rolled edges for maximum safety. Can be stacked in collapsed or upright position. Fork lift or pallet truck can enter from all four sides for easy lifting.

Boxes stacked in collapsed position.

Boxes stacked in upright position.

*Write for Bulletin E-14*

MANUFACTURERS SINCE 1883 **PHILLIPS** PITTSBURGH, PA.

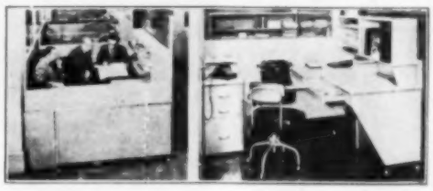
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 555 If you write the maker

## FURNITURE . . L-shaped desk and accessory parts to form small room

**Source:** KORDA INDUSTRIES
20 W. 46th St., 2nd Floor, New York 19, N. Y.



**Korda-Roem** trade names new assembly of desk, integral partitions, cabinets, bookcases and shelving with which an open office space can be converted into any desired arrangement of open, semi-open and enclosed individual offices. An initial setup can be changed with little effort to meet changing conditions. The desk with an extension unit on each end measures 75 inches. The unit with its drawers, can be removed to make the dimension 60 inches. Four of the desks and six extensions provide for an enclosure measuring 150 in. on each side with one side open in the center for an entrance measuring 30 in. in width.

**The equipment** is made of metal and is manufactured under license from E. I. du Pont de Nemours & Company. Tops are linoleum in colors matching the gray or light blue-green finish on the metal. Formica or natural-wood tops can be specified as well as any desired finishing color. The partitions mount glass but plastic or other material is available to order. The company is prepared to make detail layout on receipt of floor plans and data on requirements.

BREVITY—Identify by IEN - 556 If you write the maker

## HEAT TREATING . . Gas fired machine indexes work to heat, quench, temper

**Source:** SELAS CORP. OF AMERICA
550 E. Erie Ave., Philadelphia 34, Pa.

**Two index plates** are assembled side by side on vertical shafts in this new tool-hardening and drawing machine. Each provides seven stations to heat, oil-quench, wash and wash again, temper, cool and unload. The machine was developed to work successively on the cutting and hammer ends of a run of chisels. It can be applied equally well for similar single or double-end tools or production work pieces. Production rate on the chisels is 60 finished pieces per hour.

**The machine** is typical of heat-treating equipment the company is prepared to design and manufacture for specified purposes. It includes the required mechanisms including the hydraulic apparatus to index the work plate, to control gas flow to the burners, and to actuate the oil and water flows for quenching and washing.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 99*

BREVITY—Identify by IEN - 557 If you write the maker

**NP PRE-ENGINEERED** *Pneumatic* **DOOR OPERATORS**

**NATIONAL PNEUMATIC CO., INC.**

Boston • Graybar Bldg., New York • Chicago

BREVITY—Identify by IEN - 558 If you write the maker

IT has dry air-itis . . . dried out, cracked at the creases, strength reduced. It's no longer a suitable shipping container. Low wintertime humidities are hard on all of your paper boxes and packaging materials.

Moreover, dry air causes warping, wavy stock, off-register printing and scoring troubles.

Automatically controlled humidification with economical Armstrong Steam Humidifiers prevents all this simply by adding steam directly to the air. They often repay their cost in one heating season. Available from stock, ready for easy installation. Write today.

**SEND FOR BULLETIN 1772**

Complete information includes illustrations, diagrams, data, prices, etc. Write:

**ARMSTRONG MACHINE WORKS**

888 Maple Street • Three Rivers, Michigan

BREVITY—Identify by IEN - 559 If you write the maker

## CLANCY SURE-GRIP HOSE CLAMPS

• CAN BE REUSED
• HEAVY STEEL
• PERFECT CIRCLE

Clancy clamps grip evenly, hold any pressure the hose stands. Each part separately galvanized . . . no raw edges, won't rust. Sure-Grips keep their shape, can be removed and reused. For air, gas, water or steam. Every size to fit foreign or domestic hose.

Write for prices.

**J. R. CLANCY INC.**
1004 W. Belden Ave.
SYRACUSE 4, N. Y.

BREVITY—Identify by IEN - 560 If you write the maker

## This NEW booklet → tells you how to increase the life of wearing parts

Every manufacturer or user of metal parts . . . every welding engineer, master mechanic, maintenance superintendent, and plant foreman . . . should have a copy of this really *complete* booklet on hard-facing. It takes all the guesswork out of choosing the right alloy, the right welding process, and the best welding procedures for applying the rod.

Ask for "HAYNES Alloys—Hard-Facing Manual."

**Haynes Stellite Division**
**Union Carbide and Carbon Corporation**
UCC
**General Offices and Works, Kokomo, Indiana**

"Haynes" is a trade-mark of Union Carbide and Carbon Corporation.

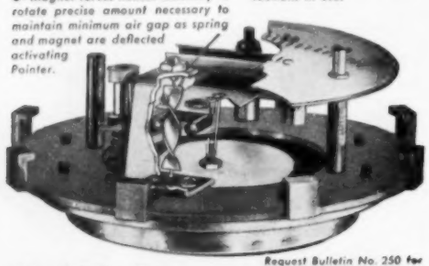
BREVITY—Identify by IEN - 561 If you write the maker

## NEW HELICAL-MAGNETIC ACTION!

## DWYER MAGNEHELIC GAGES for MEASURING LIGHT AIR PRESSURES

- Flexible Diaphragm.
- Cantilever Spring is deflected by diaphragm movement in proportion to pressure change.
- Magnet attached to outboard end of spring.
- Helical Pointer Assembly mounted vertically between magnet ends.
- Magnet forces helical assembly to rotate precise amount necessary to maintain minimum air gap as spring and magnet are deflected activating Pointer.

The first really new development in air measurement in the last decade! Friction-less—accurate—inertia-free. No bearing or links to wear. Cannot be damaged by sudden surges. The Magnehelic Gage is not a delicate instrument and requires no special precautions in use.



Request Bulletin No. 250 for complete description.

**F. W. Dwyer Mfg. Co.**
307 SOUTH WESTERN AVENUE CHICAGO 12, ILLINOIS

BREVITY—Identify by IEN - 562 If you write the maker

## UNIVERSAL INDUSTRIAL CONVEYOR

Low First Cost . . . .
Low Maintenance

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

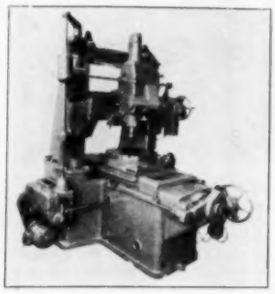
INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 563 If you write the maker

BREVITY—Identify by IEN - 564 If you write the maker

## JIG BORING . . Precision machine covers 20 by 28 in. working area

Source: HAUSER MACHINE TOOL CORP.
28-32 Park Ave., Manhasset, N. Y.



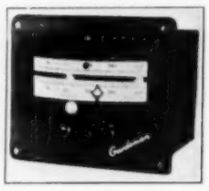
**Type 5** is a new machine in the company's line of Swiss equipment for precision jig boring. The machine mounts a spindle with boring capacity to 9 in. and axial feed measuring 9 in. also. Maximum drill capacity is 1⅝ inches. The work table presents a finished surface measuring 24½ by 29½ in. with transverse and longitudinal travel at 20 and 28 inches. Maximum distance spindle to table is 28½ in. and clearance between the machine columns is 35½ inches. A circular table 20 in. in diameter mounts on the rectangular table. There is also a 12¼-in. circular tilting table.

**Lead screws** operating in connection with vernier scales provide for table and head positioning within .0002 inch. Settings are read to .0001 in. on the scales. Readings for depth on a dial indicator are in .001-in. divisions. Motors are provided to drive the spindle, the transverse movement of the head, vertical movement of the transverse slide and the work table. Overall dimensions are 75 by 71 by 83 inches. Weight is about 7,000 pounds.

BREVITY—Identify by IEN - 565 If you write the maker

## CONTROL . . Electronic instrument for application in specified process

Source: TACO WEST CORP.
515 N. Noble St., Chicago 22, Ill.



**Gardsman Model J** is a new unit in the company's electronic control for use in connection with temperature, pressure, flow, liquid level or any other process variable in which the variable can be made to supply an electric current minimum at 125 microamperes and 10 millivolts. This current is employed in the instrument to operate its indicating mechanism and move a flag into a balanced field. Presence of the flag in the field results in unbalance that is employed to actuate a relay in the control circuit.

**Relay contacts** rate 4 amp. on 110-volt ac. The instrument operates on 110 or 220-volt 60-cycle ac. Contact arrangement can be single-pole double-throw with high or low-limit cutout and manual or remote reset. It also can be two-position on-off with high or low-limit cutout and manual or remote electrical reset.

**The scale** is 5 in. in length. The pointer travels through a 75-deg. arc. The balanced field is movably mounted in connection with an indicator so it can be positioned at a variable control point in the arc of pointer travel. Accuracy is within ¾ per cent of full scale.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 566 If you write the maker

## REED

TRADEMARK

### SELF FEEDING RATCHET REAMER

*Saves Time, Money and Effort*

Spiral flutes with patented cutting edges cut burr cleanly, quickly and easily, with no pushing effort. Exclusive double-pawl ratchet reduces lost motion 50%. Capacity ⅛" to 2".

*Ask your Jobber or Write for descriptive circular*

*In a vise or pipe tool . . . if it's a REED, it's RIGHT*

PIPE VISES AND STANDS | MACHINISTS VISES | THREADERS CUTTERS

**REED MANUFACTURING COMPANY**
ERIE, PENNSYLVANIA, U. S. A.

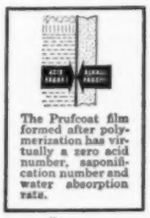
BREVITY—Identify by IEN - 567 If you write the maker

## Corrosion Proofing

IN SOME OF AMERICA'S LARGEST PLANTS

- "Prufcoat on floors and pump supports in sulfuric acid concentration plant—no failure after more than three years."
- "Entire concrete building coated with Prufcoat—no trace of failure due to blistering, peeling or chipping in over five years."
- "Prufcoat on concrete piers and steel beams subjected to muriatic acid fumes—no deterioration in over six years."

**Actual Prufcoat reports. Names of these plants upon request.*




The Prufcoat film formed after polymerization has virtually a zero acid number, saponification number and water absorption rate.

In case after case, in leading industrial plants throughout the country, Prufcoat has stopped profit-eating corrosion and cut painting maintenance costs — *often as much as 70%*. Write for Typical Prufcoat Protecto-graph, showing actual cost comparison between painting with Prufcoat and conventional paints. Or better still, pick the toughest corrosion area in your plant, apply Prufcoat, and see for yourself the amazing results. Remember: Prufcoat *saves* more because it *protects* more. Prufcoat Laboratories, Inc., 65 Main St., Cambridge, Mass.

**PRUFCOAT** PROTECTIVE COATING

SPECIFICATIONS
- Acid Proof
- Alkali Proof
- Alcohol Proof
- Oil Proof
- Water Proof
- Flame Proof

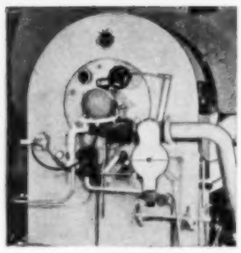
*Applies Like Paint to Masonry, Metal, Wood*

BREVITY—Identify by IEN - 568 If you write the maker

W. N. BEST · CALOREX · COMBUSTION EQUIPMENT

## INDUSTRIAL BURNERS

**PACKAGED BURNERS for OIL, TAR, GAS and combination OIL & GAS**



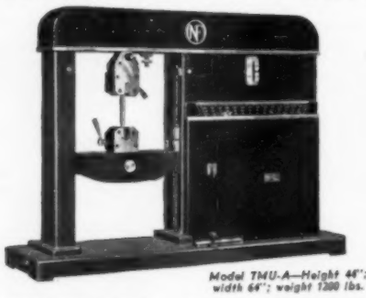
BEST packaged Rotary cup burners are ideal for installations where simple conversion at will to gas or oil is desired. And BEST Engineering Consul will result in top fuel efficiency.

**W. N. BEST Combustion Equipment Co.**
IEN 1-51 413 11th St., Carlstadt, N. J.

BREVITY—Identify by IEN - 569 If you write the maker

It Will Pay You to Make Your Own Tests with

## NATIONAL FORGE UNIVERSAL TESTING UNITS



*Model TMU-A—Height 46"; width 64"; weight 1280 lbs.*

The National Forge Universal Testing Machine, Model TMU, is compact, accurate, dependable, easy to operate and moderately-priced.

Wide working clearances, long stroke, quick-action simplified variable-speed control, improved grips and a wide spread of load scale ranges adapt this modern, streamlined unit to production, research or school instruction tests of a great variety of materials and specimen sizes. A.S.T.M. accuracy requirements are guaranteed.

Three load scale ranges: Model TMU-A—0-30,000, 0-6000, 0-600 lbs. Model TMU-B—0-15,000, 0-3000, 0-300 lbs.

*For details, write for Brochure 501.*

TESTING MACHINE DIVISION
**NATIONAL FORGE & ORDNANCE COMPANY**
Dept. EN Irvine, Warren County, Penna.

BREVITY—Identify by IEN - 570 if you write the maker

Shown above: AMP's exclusive PRE-INSULATED DIAMOND GRIP® terminal. COMPLETELY INSULATED! Install with one quick stroke of a tool with rates available up to 3300 terminations per hour. Unique CORROSION PROOFING process provides an excellent electrical contact between the metal of the terminal and metal of the conductor, and greatly retards the detrimental effects of salt sprays, noxious gases, and most commercial acid fumes. Only AMP can offer such *double* protection.

**AMP** AIRCRAFT-MARINE PRODUCTS INC.
1507 N. Fourth Street, Harrisburg, Pa.

BREVITY—Identify by IEN - 571 if you write the maker

**HAISS** FOR 58 YEARS BUILDERS OF HIGH QUALITY

## Material Handling Equipment

## BUCKET LOADERS

For loading: Sand, gravel, stone, topsoil, coal, snow and similar materials. Special new features include Sealed Bearings on head and tail shafts, two or four wheel drive, hydraulic raising and lowering, manganese or roller chain.

## CONVEYORS

**TROUGH OR FLAT BELT CONVEYORS**
For loading sand, gravel, coal and similar bulk materials from cars or piles to trucks.

**PACKAGE CONVEYORS**
For handling bags, boxes, crates, cartons, etc. Portable or stationary mounting. All types—All sizes.

**UNDERCAR UNLOADERS**
Heavy duty for handling crushed stone, gravel, sand, coal and similar materials. Capacity up to 5 tons per minute.

**SECTIONAL CONVEYORS**
Channel Frame or Lattice Frame construction made in easily assembled individual sections for permanent or portable installation. All sizes and capacities available. Trough belt—for handling crushed stone, sand, gravel, coal and similar materials. Flat belt type—for handling bags, boxes, packaged materials.

## BUCKETS

**EXCAVATING REHANDLING**
Heavy duty buckets for digging and trenching, dredging and rehandling. Capacities ¼ to 3 yards. Special narrow buckets available for trenching. Ask for bulletin H-850.

Capable Representatives in All Principal Cities

GEORGE HAISS MFG. CO., INC. division of PETTIBONE MULLIKEN CORP.
141st to 144th St. on Park Ave.
NEW YORK 51, N. Y.
Phone Mott Haven 5-2200

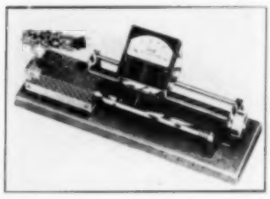
4700 W. Division Street
CHICAGO 51, ILL.
Phone Spaulding 2-9300

HAISS UNIVERSAL
NEW YORK CHICAGO CEDAR RAPIDS

BREVITY—Identify by IEN - 573 if you write the maker

## TESTING . . Melting point meter for waxes, plastics, to 500 deg. F.

**Source: CLARKSTAN CORPORATION**
**11921 W. Pico Blvd., Los Angeles 34, Calif.**



**Rectangular bar** at the front of this new Model-304 test meter is chromium plated and connected at its left-hand end to an electric heating element. The element connects to a 110-volt line and heats the bar so one end will be a little above room temperature while the other end will be about 500 deg. F. Back of the bar is a Weston thermometer and actuating thermocouple, the latter positioned to contact the bar and move with thermometer along its length.

**A small sample** of the substance to be tested for melting point is spread along the bar. The point of demarcation between the solid material and where it starts to melt is observed and the thermocouple is positioned there. The reading on the thermometer will be the melting point. Application can be made on fats, gums, low-melting alloys, compounds, plastics, resins, tars, waxes. List price is $135.

BREVITY—Identify by IEN - 574 if you write the maker

## SOLDERING . . Aluminum flux, soluble in water, tins metal quickly

**Source: ALL-STATE WELDING ALLOYS CO.**
**271-5 Ferris Ave., White Plains, N. Y.**

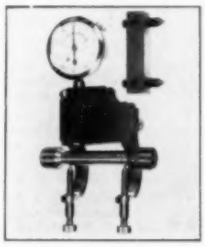
**Packaged in jars, cans, drums**

**No. 39 Brazaloy** is a new water-soluble flux for use in joining pieces of aluminum together and in soldering aluminum to other metals such as bronze, copper, steel. The new flux replaces a previous formula requiring alcohol as the solvent. Water can be added should the solution dry out.

BREVITY—Identify by IEN - 575 if you write the maker

## GAGE . . Dial indicator assembly applies on specimen for tension testing

**Source: F. F. METZGER & SON**
**6th & Huntingdon Sts., Philadelphia 33, Pa.**



**New 2-in. size** has been added to the company's line of strain gages in which a dial indicator is assembled with stationary and movable point fingers to read elongation as a test specimen is stressed in tension. The gage applies after a pin equipped marker bar has been used to make the required indentations 2 in. apart. It positions at zero prior to stressing. It reads in .0001-in. divisions to .03 in. in three revolutions. Available in the line in addition to the 2-in. midget unit are others measuring 4, 6, 8 and 10 inches.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 576 if you write the maker

Powerful, easy to use! Cuts loose tough, incrusted grime and picks it up (8 to 20 lbs. per min. average) leaves floor clean, smooth and dry.

**TENNANT**
INDUSTRIAL FLOOR MACHINE

- Eliminates hand scraping, chemicals, soap, water.
- Cuts cleaning costs, is many times faster than other methods . . . does a better job.
- Ideal for ALL types of grime—tar, grease, metal cuttings, paint, etc.
- Self-propelled, easy one man operation.

RUGGED Tennant Floor Machines for 12" or 16" drum accessories. Motors up to 6 h.p. (gas) or 5 h.p. (elec.) REVO-tool at right has hundreds of alloy steel cutters for heavy duty cleaning.

**WRITE TODAY** for illustrated bulletins and FACTS about mechanized floor maintenance.

G. H. TENNANT CO.
2574 North 2nd Street
Minneapolis 11, Minnesota

The way to finer floors **TENNANT** Floor Maintenance Systems

BREVITY—Identify by IEN - 577 if you write the maker

Just because Joe enjoys a good stogie, he shouldn't assume Mary enjoys one, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

**OIL CUPS permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little*.**

Gits oil cups have been the standard for industry for more than 40 years. Gits Bros. has the largest selection of oil cups available anywhere. Call on Gits Bros. for a prompt, efficient solution to your lubrication problems.

***Write for free Price Guide Catalog***

**GITS BROS. MFG. CO.**
1854 S. Kilbourn Ave. • Chicago 23, Ill.

BREVITY—Identify by IEN - 578 if you write the maker

***Independent laboratory test for a leading machine tool builder reveals***

## WHY "BLU-MOL"® OUTPERFORMS ALL OTHER BLADES TESTED

Some time ago, a leading machine tool builder tried out a number of different hack saw blades. "Blu-Mol" blades proved so outstandingly superior that the company decided to find out why and sent them to a testing laboratory. Here is the report they received:

**Sample No. 407564** **1-3-50**

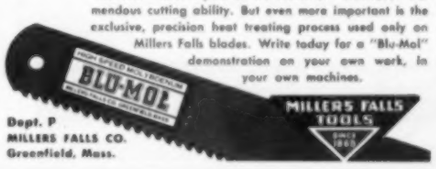
**The "excellent" service given by this blade is apparently the result of three factors:**

**First, homogeniety of steel. The stock shows no evidence of high concentration of carbides in stringer formation which creates weak spots and brittleness.**

**Second, the relatively high hardness (C64.5), attained without the usual sacrifice of grain fineness, gives the combination of tooth strength and toughness needed for a long service life.**

**Third, surface condition. There is no evidence of lowered surface carbon content so commonly found in hack saw blades. This manifests itself by greater resistance to tempering and a consequent retention of a larger percentage of white martensite.**

"Blu-Mol" steel is part of the secret of "Blu-Mol's" tremendous cutting ability. But even more important is the exclusive, precision heat treating process used only on Millers Falls blades. Write today for a "Blu-Mol" demonstration on your own work, in your own machines.




Dept. P
MILLERS FALLS CO.
Greenfield, Mass.

BREVITY—Identify by IEN - 579 if you write the maker

*Control Costs with*

## COUNTING SCALES

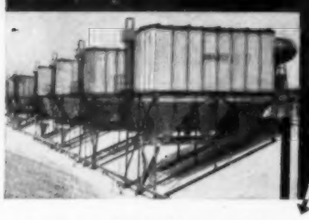
Toledo's *complete line* of Counting Scales gives you the right model for *accurate cost control* in a wide range of jobs! For issuing pre-determined quantities of uniform parts . . . counting unknown quantities . . . for *faster inventory counts* . . . or to get accurate receiving, shipping, production, cost and piece-work counts. Complete selection of models . . . for parts weighing only a few grains . . . up to total counting capacities of several tons. Also choice of double and triple ratio combinations. Send for booklet 2204. Toledo Scale Company, Toledo 12, Ohio.

**TOLEDO**
**HEADQUARTERS FOR SCALES**

BREVITY—Identify by IEN - 580 If you write the maker


DRACCO DUST CONTROL INCREASES EFFICIENCY

8 WAYS Check Them



1. Recovery of valuable materials,
2. Healthier and happier workers,
3. Increased efficiency of plant,
4. Reduced cost of equipment repair,
5. Elimination of occupational diseases caused by dust,
6. Stops complaints by neighbors,
7. Elimination of expensive law suits,
8. Complies with State laws and City ordinances,

It will pay to consult DRACCO Engineers.

For Further Information Write

DRACCO CORPORATION

4049 E. 116th Street, Cleveland 5, Ohio New York Office: 130 West 42nd St.

PNEUMATIC CONVEYORS • DUST COLLECTORS

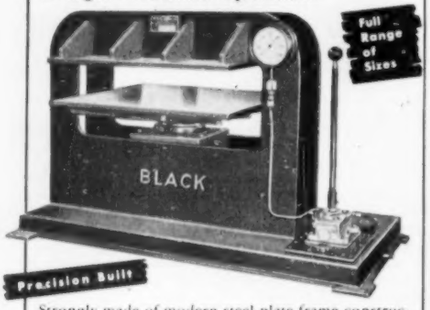

BREVITY—Identify by IEN - 581 If you write the maker


BB BLACK BROTHERS

HAND OPERATED . . .

HYDRAULIC LAMINATING PRESS

for Laboratory and Experimental Work or Light Production Operations




Strongly made of modern steel-plate frame construction, this press will offer years of excellent service. Variations may be had in the width of platen, vertical opening, length of stroke, and total pressure applied. Write for literature.

THE BLACK BROTHERS CO., INC.

MENDOTA, ILLINOIS, U. S. A.


BREVITY—Identify by IEN - 582 If you write the maker


YES . . . YOU CAN HEAR IN NOISY SPOTS

USE Burgess-Manning ACOUSTI-BOOTHS

You can hear easily . . . talk comfortably . . . in a Burgess-Manning Acousti-Booth. Thick walls of sound-absorbent material soak up noise. Conversations are clearer . . . "private." Airy, no door . . . easily moved . . . sturdy construction.

Mail Coupon for FREE BULLETIN

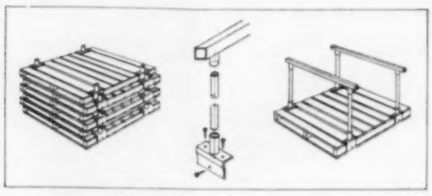
BURGESS-MANNING COMPANY
743-A East Park Avenue, Libertyville, Illinois
Please send booklet describing Burgess-Manning Acousti-Booths.

Name _____
Firm Name _____
Street-City _____


BREVITY—Identify by IEN - 583 If you write the maker

## HANDLING . . Stacking brackets and fittings for use on wood pallets

Source: PALTIER CORP.
51-55 W. Jackson Blvd., Chicago 4, Ill.



**Palteam** is a new assembly of four brackets, four steel-tube uprights and two square-tube cross members for application with existing three-stringer wood pallets. The brackets are secured permanently to a pallet. The uprights and cross members assemble as shown in the illustration to permit stacking loaded pallets. When the uprights and cross members are removed the pallet lie flat upon each other. Uprights are available for heights of 18 to 60 inches. Cross members range from 30 to 60 in. in length to suit the application.

BREVITY—Identify by IEN - 584 If you write the maker

## LIGHTING . . Flood light reflector for portable use in photographic work

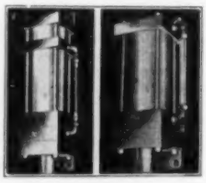
Source: JAS. H. SMITH & SONS CORP.
1950 Lake St., Griffith, Ind.

**Adapta-Lite** is a new floodlight reflector with handle, mounting clip, socket, plug-equipped extension cord and a reflector measuring 5⅝ to 18 in. in diameter. The socket is a heat-insulated Bakelite unit. The assembly carries Underwriters' Laboratories Inc. approval for safety.

BREVITY—Identify by IEN - 585 If you write the maker

## DRIVE . . Hydraulic intensifier, air or fluid operated, to 10,000 pounds

Source: MILLER MOTOR CO.
4025-35 N. Kedzie Ave., Chicago 18, Ill.



**Air pressure** at 80 lb. will produce hydraulic pressure at 2,000 lb. in one of the sizes in this new line of hydraulic intensifiers or Fluid Pressure Boosters. The line includes a range of units with input-piston diameter at 3¼ to 14 in. and the output piston at 1 to 5½ inches. Input pressure can range from 40 to 3,000 lb. with output at 200 to 10,000 pounds.

**Bulletin B-200,** 12 pages, presents illustrated description with connection diagrams of construction, operation, application. Sizes, capacities, dimensions are tabulated.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

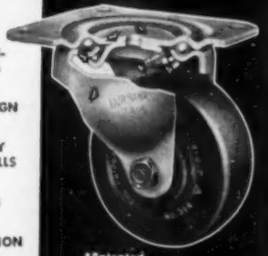
BREVITY—Identify by IEN - 586 If you write the maker


NEW Fairbanks Series "23" Double Ball Race SWIVEL CASTER

STRONGER ON EVERY POINT

The NEW Fairbanks Series "23" Double Ball Race Swivel Caster* line is designed for greater load carrying capacity in the medium duty field.

- NO KING-PIN it's eliminated!
- "LOCK-WELD" CONSTRUCTION retains perfect alignment!
- PATENTED LEG DESIGN resists distortion!
- LARGER SECONDARY RACEWAY AND BALLS work easier!
- COINED RACEWAYS improve with use!
- PRESSURE LUBRICATION reduces friction!



*Patented

THE Fairbanks COMPANY

393 LAFAYETTE STREET, NEW YORK 3, N. Y.

BRANCHES: Boston 10 • Pittsburgh 22 • New York 3 • Rome, Ga.

TRUCKS • VALVES • DART & PIC UNIONS • CASTERS


BREVITY—Identify by IEN - 587 If you write the maker


LETS HAVE THE TOUGHEST CHAIN JOB IN YOUR PLANT

● Put HERC-ALLOY Steel Chain on the toughest job you can find. Let HERC-ALLOY service-experience records give you first hand, the undeniable answers in black and white.

Production executives and safety directors who have used HERC-ALLOY for slings or other applications agree they have yet to find an alloy steel chain superior to HERC-ALLOY.

COLUMBUS McKINNON CHAIN CORPORATION

(Affiliated with Chisholm-Moore Hoist Corporation)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

SALES OFFICES: NEW YORK • CHICAGO • CLEVELAND • SAN FRANCISCO

Other Factories at Angola, New York; St. Catharines, Ontario and Johannesburg, S. A.


BREVITY—Identify by IEN - 588 If you write the maker

PANGBORN Hydro-Finish

Prolongs Die Life!
Saves Labor!
Eliminates Emery Cleaning!

for ROCKFORD DROP FORGE CO.
Rockford, Illinois

ROCKFORD DROP FORGE COMPANY reports that Hydro-Finish increases die life by eliminating surface-disturbing emery cleaning at end of runs. Also they find costly hand polishing is cut to a minimum because it is now done before heat-treating — Hydro-Finish removes all heat-treat scale and leaves surfaces smoother than hand polishing and with closer tolerances. They claim that Hydro-Finish will pay for itself in savings in two to three years.

HYDRO-FINISH can simplify the manufacture and maintenance of tools, dies and molds for you. It reduces usual costly hand work and produces a surface virtually free from directional grinding lines. On the production line Hydro-Finish assures better bonding, electroplating, painting — gives you *the surface you want* within .0001" with no pits, grooves or hard-to-clean imperfections left after processing.

FOR FULL INFORMATION on the many ways Hydro-Finish can save you money, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Pangborn

BLAST CLEANS CHEAPER

with the right equipment for every job

BREVITY—Identify by IEN - 590 if you write the maker

BREVITY—Identify by IEN - 591 if you write the maker

**"Drive thy business — let not that drive thee."**

—Ben Franklin's Almanac, 1757

These days thee must work a month for the taxgatherer before thee begins to work for thyself. Keep a firm hand on the wheel of savings to bolster thy "nett after taxes."

—Acme Steel Notebook, 1950*

A business steered by the guideposts of thrift and efficiency seldom goes wrong. Helping business obtain greater thrift and improved efficiency has been the reason for Acme Steel methods and Acme Steel products for 70 years.

We are now helping more than 50,000 customers, including almost every industry, obtain these benefits, particularly in departments and operations concerned with packaging, shipping and materials handling.

For detailed information about Acme Steel products, write on your business letterhead for free booklets on the specific products in which you are interested.

**ACME STEEL COMPANY**

Dept. IEN-11, 2838 Archer Avenue, Chicago 8, Illinois

*There are 46 Acme Steel service offices in the U.S. and Canada.*

**The sagest maxims of Ben Franklin, together with modern parallels, appear in Acme Steel Notebook, 1950. We have a free copy for you. Just ask for it.*

ACME STEEL

Who "owns" Acme Steel? Our 1949 annual report showed 7,538 stockholders—2,730 women, 2,705 men, 1,612 joint accounts and 491 corporations and institutions. Acme Steel stockholders have increased approximately 20 per cent in number in the past two years.

**Metal-to-metal or metal-to-other materials**—just stitch it like paper with Acme-Morrison metal stitchers.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHER machines • ACME SILVERSTITCH stitching wire • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

BREVITY—Identify by IEN - 593 if you write the maker

## CHUCK . . Electro magnetic unit mounts on lathe spindle, is 9 in. diam.

**Source: CONTINENTAL ELECTRIC CO.**
**1232-36 S. Prairie Ave., Hawthorne, Calif.**

**Model C** designates new electro-magnetic chuck for operation on 110-volt 60-cycle ac. through its rectangular control housing. The chuck is fitted with a 2¾-in. threaded bore to mount on a lathe spindle and can be equipped with adapters for smaller spindle sizes.

**The ring** through which current connects in the chuck body is mounted to ride in non-rotating position on the hub and main body. The chuck face carries five concentric ring poles. Control centers at the housing for "on", "off" and "demagnetize". Current input is about 30 watts for 4,000 lb. of holding power over the surface. List price is $125.

BREVITY—Identify by IEN - 594 if you write the maker

## CUTTING . . Slitting service to cut tape rolls into narrow widths

**Source: M & C PRODUCTS CO.**
**P. O. Box 6264-A, Philadelphia 36, Pa.**

**User supplies rolls to cut**

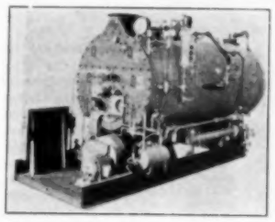
**New cutting** or slitting service has been established by the company, based on a machine of its own manufacture, to cut wide rolls of material into narrow widths in the roll, without unwinding and winding again. The company can cut any type of self-adhesive or pressure-sensitive tape such as cellophane, acetate, Fiberglas, cloth to specified width from a $\frac{1}{16}$-in. minimum.

**In addition** to cutting tape rolls the service includes rolls of materials such as greaseproof paper. Rolls to 36 in. in width can be cut to 2 in. or wider.

BREVITY—Identify by IEN - 595 if you write the maker

## BOILER . . Self-contained design to 500 hp., burns heavy oil or gas

**Source: CLEAVER-BROOKS CO.**
**324-8 E. Keefe Ave., Milwaukee 12, Wis.**



**New rotary burner** has been developed for the company's line of self-contained boilers in ratings from 15 to 500 hp. to enable the boiler to burn heavy fuel oils and gas interchangeably. The burner is served by a fuel-oil pump and heater and by a motor-driven blower supplying air for combustion. Firing is into a cylindrical chamber connecting with the fire-tubes in the company's four-pass design.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 596 if you write the maker

**MORSE**

**"ROCK-A-DRUM" VERTICAL TRUCK**

***WHEELS TO ANY LOCATION!***

Specially engineered for use with drums which can be drained only in a vertical position. The Morse Truck is easily locked into dispensing position by one man. The weight of the load is evenly distributed over the four wheels and adequate clearance is provided under pouring spout.

Write for Bulletin 949

**MORSE** *MANUFACTURING CO. INC.*
123 Dickerson Street Syracuse 2, N. Y.

BREVITY—Identify by IEN - 597 if you write the maker

**DO YOU KNOW?**

—that a **PILOT LIGHT** CAN IMPROVE YOUR PRODUCT . . . add attraction—safety—service?

*Ask* DIALCO
— what lamp to use
— how to use it
— what it will do
— what it will cost

**THIS MAY BE THE ONE**

Designed for low cost NE-51 Neon

• Built-In Resistor • Patented
• U/L Listed • Rugged

Catalogue Number 521308 — 997 for 110 or 220 volts.

**SAMPLES for design purpose NO CHARGE**

*NEW!* Write for the "HANDBOOK OF PILOT LIGHTS."

Write us on your design problems.

*Foremost Manufacturer of Pilot Lights*

**The DIAL LIGHT COMPANY of AMERICA**

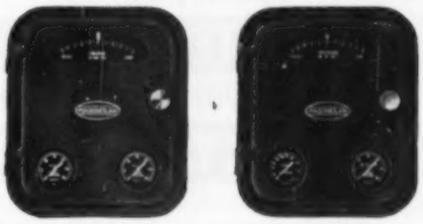
900 BROADWAY, NEW YORK 3, N. Y.

BREVITY—Identify by IEN - 598 if you write the maker

# Two Masoneilan Controllers

***That Provide Precise Control at Moderate Cost***

**IN A MAJORITY OF PRESSURE APPLICATIONS**
**IN MANY TEMPERATURE APPLICATIONS**



**No. 2700 Pressure Controller** | **No. 3700 Temperature Controller**

***NOTE THESE MASON-NEILAN FEATURES***

1. Same basic control mechanisms for pressure and temperature instruments insure simplicity, permit standardization of parts.
2. Pneumatic feedback — usually found only in more expensive proportional controllers . . . precise response.
3. Control point setting mechanism provides extreme accuracy of adjustment and easily read expanded index scale.
4. Proportional band adjustment between 5 and 50%.
5. Compact and sturdy case and internal mechanisms; all important internal parts of bronze, brass or 18-8 stainless steel.
6. Control action reversible with either bourdon or bellows.

*Masoneilan models 2700 pressure and 3700 temperature controllers meet many industrial application requirements. They are moderate in cost . . . provide excellent performance, precise proportional response and ease of adjustment.*

**MASON-NEILAN REGULATOR CO.**

1189 ADAMS STREET, BOSTON 24, MASS., U.S.A.

BREVITY—Identify by IEN - 599 if you write the maker

**ARO** HEAVY DUTY VERTICAL GRINDER

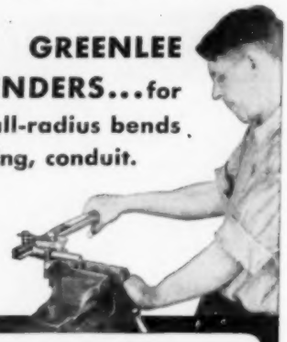
- **IT'S BIG** . . . yet weighs only 11 lbs.!
- **BIG POWER** . . . try it . . . find out for yourself!
- **BIG TIME PERFORMANCE** . . . easy to handle . . . safety throttle.
- **TRY IT** . . . contact your ARO distributor for an on-the-job demonstration.

**ARO AIR TOOLS**

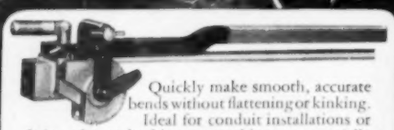
Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIR CRAFT PRODUCTS . . . AIR HOSE FITTINGS

The Aro Equipment Corporation, Bryan, Ohio
Aro of Canada, Ltd., Toronto, Ontario

BREVITY—Identify by IEN - 600 if you write the maker



## GREENLEE HAND BENDERS...for making small-radius bends in pipe, tubing, conduit.



Quickly make smooth, accurate bends without flattening or kinking. Ideal for conduit installations or fitting pipe and tubing on machines . . . especially designed to form neat bends for sharp corners and nooks. Various models and sizes for steel, copper, brass and aluminum tubing or pipe, rigid or thin-wall conduit.

**Free Folder and Booklet** on the Greenlee Bender line. Write Greenlee Tool Co., 1861 Herbert Avenue, Rockford, Illinois.

GREENLEE

BREVITY—Identify by IEN - 601 if you write the maker

## SPEED PRODUCTION WITH 10-DAY DELIVERY

## SPEED DESIGN WORK WITH FREE TEMPLATES

## SAVE INSTALLATION SPACE WITH O-M CYLINDERS

Ortman-Miller cylinders for air, hydraulic and water applications are available in the full range from 1½" to 8" bores *on ten-day delivery!* Add this to the other advantages of space saving and simplicity of design (no tie-rods, no bulky end caps). All machined steel (no castings) and bearing bronze. Complete selection of *interchangeable* mounting devices. Write today for details and services of your distributor.

*And . . . write today for free complete set of templates in one-half and full scales. Precision drawn to save your time!*

**ORTMAN-MILLER**

MACHINE CO., INC.
1208 150th Street, Hammond, Indiana

BREVITY—Identify by IEN - 602 if you write the maker

## Slash...! FLOOR MAINTENANCE COSTS with EMERI-CRETE FLOORING

Floor repair and replacement costs can be a thing of the past with EMERI-CRETE FLOORING . . . the toughest, hardest flooring material ever used!

Made of CORTLAND EMERY AGGREGATE, cement and water, it is hard, smooth and skid-proof. Ideal for new heavy-duty floors or resurfacing old ones — EMERI-CRETE FLOORING can readily be laid by your maintenance department or accredited local contractor. This harder smoother floor means easier-moving equipment, lower handling and operating costs, and reduced accidents.

*Write for our FREE Proof-Positive Folder No. 601.* Read how plants in every industry are enjoying years of maintenance-free service. Lists users, many installations.

Walter Maguire Co., Inc., Dept. IN-1
60 East 42nd St., New York 17, N. Y.
Name
Title
Company
Address
City Zone State

6503

EMERI-CRETE FLOORING

BREVITY—Identify by IEN - 603 if you write the maker

## TESTING . . Impact shock machine drops test load into sand filled box

Source: BARRY CORP.
179-P Sidney St., Cambridge 39, Mass.

**A test load** measuring 36 by 36 by 30 in. can be positioned on the platform of this new Type 150 VD machine to be dropped through a height maximum at 3 ft. in the standard machine. At the bottom the platform and load are brought to rest in a 4 by 4-ft. sand-filled box. Test load weight is maximum at 150 pounds. The machine will impose deceleration to 100G. The interval can be adjusted between 6 and 32 milliseconds.

**Steel-sheathed blocks** are attached to the bottom of the platform. They penetrate the sand to produce a single deceleration pulse without rebound. Their number and arrangement determine the test action. The test conforms to Government Specification AN-E-19.

BREVITY—Identify by IEN - 604 if you write the maker

## METAL BELLOWS . . Stainless steel, diameters from 7/16 to 26⅜ inches

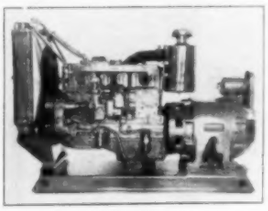
Source: CLIFFORD MFG. CO.
150-54 Grove St., Waltham 54, Mass.

**New line** of hydraulically-formed stainless-steel bellows is announced by the company for use in temperature and pressure control, shaft sealing, steam traps, flexible instrument joints, expansion and contraction joints. Each unit is designed and manufactured to meet specific requirements of the application.

BREVITY—Identify by IEN - 605 if you write the maker

## GENERATOR . . Diesel engine driven, to 250 kva., 120 to 480 volts, ac.

Source: CUMMINS ENGINE CO.
Wilson & 5th, Columbus, Ind.



**Nine sizes** are included in the company's new line of single-bearing ac. generators in direct connection with the Cummins diesel engine. Smallest rates 40 kva. on 60-cycle ac. The largest, for continuous duty, is 200 kva. and the largest for intermittent duty, as in standby service, rates 250 kva.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 606 if you write the maker

*Announcing A New LOW COST Ball Bearing for Use*

## LINEAR MOTIONS

THE COMMERCIAL GRADE SERIES B

## BALL BUSHING

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A Ball Bushing.

The low-cost Commercial Grade Series B bearing is now added to the Ball Bushing line and offered to original equipment manufacturers. This ball bearing has been developed for support of linear motions in competitively priced, volume produced products where super precision is not essential. Alert designers can now make tremendous improvements in their products by using Ball Bushings on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Competition is returning. Up-to-date engineering can be *important* to you!

NEW 1½" NOW AVAILABLE

Now in production for ½", ⅝", 1" and 1½" diameters. If you have a special application, phone your representative or write on the company letterhead. If not, write for Data Sheet. If not on the regular distribution and the name of our representative in your city.

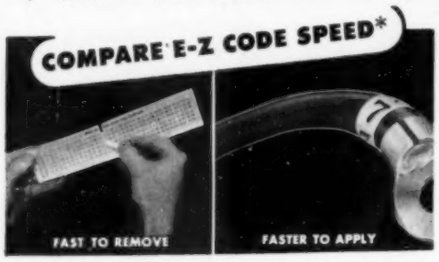
LOW FRICTION • ELIMINATE BINDING AND CHATTER • SOLVES SLIDING LUBRICATION PROBLEMS • LASTING ALIGNMENT • LOW MAINTENANCE • LONG LIFE

Dept. I THOMSON INDUSTRIES, INC. MANHASSET NEW YORK

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 607 if you write the maker

## COMPARE E-Z CODE SPEED*




### with any other wire marker or method

Just select the marker you want, pull the unique die-cut Speed Tab and the fabric marker is off! Remaining strips are still protected.

E-Z Code Markers are instantly applied *without moistening.* Stick permanently, even when pulled through conduit. Waterproof, weatherproof. Positive identification for wire, pipe, cable, conduit, terminals, parts, etc. Preprinted in 550 standard codes (including ASA and NEMA) or to your specifications.

***or ECONOMY or VISIBILITY or SIMPLICITY**

*Make an on-the-job E-Z Code test*

WRITE TODAY for E-Z Code samples

WESTERN LITHOGRAPH CO., Dept. IEN-1
E. SECOND ST., LOS ANGELES 54, CALIF.

BREVITY—Identify by IEN - 608 if you write the maker

## 1919 CURTIS 1951

### *exclusively a manufacturer of*

## UNIVERSAL JOINTS

*Free engineering data sheets and price list upon request.*

- **Ball type for light duty applications**
- **Standard for heavy duty**
- **Lo-Friction for special duty work**
- **14 sizes in stock at all times and ready for sample or volume shipments. Stock sizes ⅜" thru 4" O.D.**

Write us for information on other than stock sizes up to 6" O.D. and for other than ordinary applications and requirements. As exclusive manufacturer of Universal Joints, we specialize in design collaboration. We invite your inquiry — in detail.

For over a quarter of a century Curtis has pioneered in the manufacture of Universal Joints. Famous patented Curtis "first" include the first ball oiler, internal lubrication grooves, the "tell-tale" lock ring and the lo-friction center block.

Curtis Universal Joints are of top quality. They have to be — consistently so — for Curtis manufactures nothing else. The fact of the matter is Curtis Standards of Quality were adopted for the Class One Specifications of the Army Air Force in 1941.

**CURTIS UNIVERSAL JOINT CO., Inc.**
7 Birnie Avenue
SPRINGFIELD 7 MASSACHUSETTS

BREVITY—Identify by IEN - 610 if you write the maker

## CAL-WIC... for convenient source of supply

With plants on both the East and West Coast we are able to offer wire cloth users in all parts of the country a convenient and economical source of supply. Cal-Wic wire cloth meets a multitude of industrial needs; is available in most needed weaves, meshes and weights and in various metals and alloys. Write for illustrated descriptive catalog MS-661.

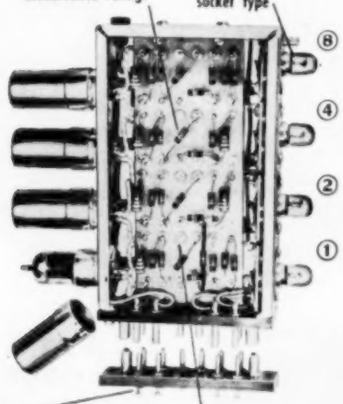
**CAL-WIC** INDUSTRIAL SCREENS

IN THE EAST—WICKWIRE SPENCER STEEL DIVISION • Clinton, Massachusetts
IN THE WEST—THE COLORADO FUEL & IRON CORP. • Denver 2, Colorado
ON THE PACIFIC COAST—THE CALIFORNIA WIRE CLOTH CORP., Oakland 6, Cal.

BREVITY—Identify by IEN - 611 if you write the maker

## Simple • Reliable • Economical

# Potter decimal counter




Direct decimal read-out — four neon glow lamps designated 1-2-4-8 provide direct indication (0-9) and instantaneous location of any defective tube.

Stable operation — wide voltage range.

High counting rates — up to 130,000 per second. Absolute accuracy guaranteed.

Covered by both I.B.M. and Potter patents issued and pending.

WRITE DEPT. 9-K FOR COMPLETE INFORMATION AND QUANTITY DISCOUNTS

A NEW LOW UNIT PRICE OF $45.00 IS ANNOUNCED AS A RESULT OF WIDE ACCEPTANCE AND QUANTITY PRODUCTION

**POTTER INSTRUMENT CO.** INCORPORATED
115 CUTTER MILL RD., GREAT NECK, NEW YORK

BREVITY—Identify by IEN - 613 if you write the maker

## GAGE . . Electronic instrument reads vacuum to 1 x $10^{-8}$ mm. of mercury

Source: NATIONAL RESEARCH CORP.
68-72 Memorial Drive, Cambridge 42, Mass.

**Type 710** is a new vacuum gage that applies thermocouple heads to read at two points in an evacuated body in a range to 5 x $10^{-3}$ mm. In one ionization head for readings to 1 x $10^{-8}$ mm. absolute. The thermocouple heads operate on the principle that temperature is a function of pressure due to varying heat conductivity in the evacuated atmosphere. The ionization head provides a reading by a controlled electron beam which registers collisions with gas ions in the head, the number of ions being a function of the pressure read direct on the indicating meter.

BREVITY—Identify by IEN - 614 if you write the maker

## PRINTING . . Plastic sheet with emulsion film for contact prints

Source: DIRECT REPRODUCTION CORP.
809-11 Union St., Brooklyn 15, N. Y.

Trial set of four 8 by 10 in. sheets clear type, $1.25

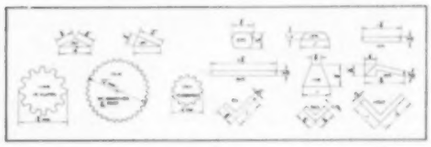
**Stability** in dimensions through processing and in service characterize the company's new Direco high-density slow-speed contact emulsion sheet for photographic reproduction of drawings, layouts, diagrams, patterns, templates. The sheet develops in Eastman Kodak D-72 developer and is washed and fixed in conventional manner.

**Available types** include clear, translucent and opaque. Thickness is .010 inch. Rolls measure 24 to 42 in. in width by 50 and 100 ft. in length. Cut sheets start at 8 by 10 in., range up to 42 by 72 inches.

BREVITY—Identify by IEN - 615 if you write the maker

## STEEL . . Cold drawn bar stock in special sections to specification

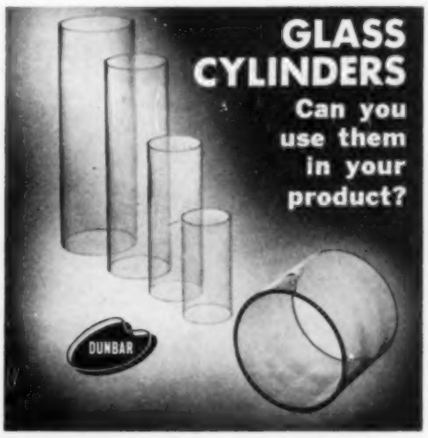
Source: A. MILNE & CO.
743-47 Washington St., New York 14, N. Y.



**Pre-Shaped** designates new line of cold drawn steel in which the company will supply special sections that will minimize subsequent machining. The steel is available in standard SAE and AISI carbon types, case-hardening, standard mild and free-cutting. Typical sections are illustrated.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 616 if you write the maker

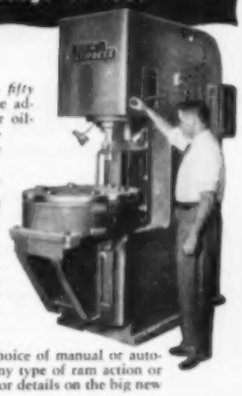



For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 963 for our Glass Cylinder catalogue No. C-51.

*Dunbar Glass Corporation*
DUNBAR, WEST VIRGINIA
NEW YORK CHICAGO CLEVELAND LOS ANGELES

BREVITY—Identify by IEN - 617 if you write the maker

## New 50-TON MULTIPRESS
### Brings HydrOILic Efficiency to Greater Range of Jobs



NOW—with capacities to *fifty* tons—Multipress brings the advantages of safer, smoother oil-hydraulic speed and precision to a new, wider range of production jobs.

The new, bigger Multipress has the same accurate, feather-touch control and easy, wide adjustability—the same work-speeding, cost-cutting efficiency offered before in models ranging to 35-ton capacity. It is also available with six and twelve-station Index Tables and other standard Multipress accessories, for highest production efficiency. Choice of manual or automatic controls for almost any type of ram action or operating sequence. Write for details on the big new 50-ton Multipress today!

The DENISON Engineering Co., 1150 Dublin Rd., Columbus 16, O.
DENISON HydrOILics

BREVITY—Identify by IEN - 618 if you write the maker

# Cramer

WHERE **TIME** IS A FACTOR OF **CONTROL** IN INDUSTRY

For a wide range of standard timers and controls... or special adaptations for specific applications . . . consult . . .

**THE R. W. CRAMER COMPANY, INC.**
BOX 16, CENTERBROOK • CONNECTICUT

BREVITY—Identify by IEN - 619 if you write the maker

# buell KNOWS DUST RECOVERY

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5030 70 Pine St., New York 5, N. Y.

buell
*Engineered Efficiency in* Dust Recovery

BREVITY—Identify by IEN - 620 if you write the maker

every style and type

# Rubber Bumpers

**What do you need?**

Largest and most varied stocks in the U.S.A. UNUSUAL STYLES to meet every demand. Low cost and prompt delivery assured.

FREE: 44 PAGE CATALOG
Full data on all Mechanical and Industrial Rubber Goods. 36 Years Experience. Write Today. Catalog MS-46.

*Take it up with*

**LAVELLE Rubber Company**
1811 WEST HUBBARD STREET, CHICAGO 22, ILLINOIS

BREVITY—Identify by IEN - 621 if you write the maker

# Abart GEARMOTORS

Here's an easy way to gear down speeds on equipment for pilot operations and development work—on agitators, conveyors, pumps, and other applications. You'll find Abart Gearmotors a big help to you. You get the *right* and dependable reduction at the right power. You get *better* operation, you save space by eliminating pulleys, couplings, belts, chains. Output speeds as low as 17 1/2 R.P.M., 1/6 to 5 H.P., ratios 5 4/5-1 to 100-1.

**ABART GEAR & MACHINE CO.**
4833 WEST 16th STREET, CHICAGO 50, ILLINOIS
*Mfrs. of Gears and Speed Reducers*

Write for BULLETIN B250

BREVITY—Identify by IEN - 622 if you write the maker

MINNEAPOLIS MOLINE MM MODERN MACHINERY

# HEAVY-DUTY *Industrial Power*

**FOR ALL TYPES OF EQUIPMENT**

Where heavy-duty, dependable power is required, equipment manufacturers select MM Industrial Power Units for economical installations. Equipment buyers prefer MM powered units for their low-cost maintenance and convenient parts service.

MM features include full pressure lubrication, large capacity oil filters, dirt proof seals, controlled cooling, and the extra margin of strength built into each engine part.

Get complete facts on MM Industrial Power Units.

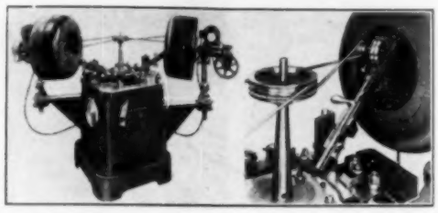
6 SIZES
25 to
250 h. p.

**MINNEAPOLIS-MOLINE**
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 623 if you write the maker

## THREADING . . Rolling machine threads 25,000 work pieces per hour

Source: D. H. PRUTTON MACHINERY & TOOL CO.
5293-7 W. 130th St., Cleveland 11, Ohio



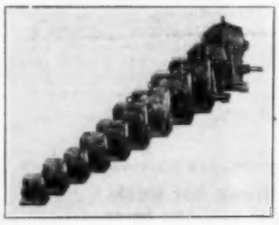
**Model 120** is a new machine in the company's Rollmaster line with capacity to thread work to 1/2 in. in diameter for a thread length to 2 1/16 inches. Work is fed from two motor-driven magazines to dies on opposite sides of a continuously rotating central wheel die. The work pieces are rolled along the stationary dies to their ends for discharge into chutes. The machine will hold to a thread tolerance of Class three.

**Adjustments** are provided for height, angle, speed, spill at the Adjustomatic feed magazines, each of which will deliver 15,000 1/4-in. bolts per hour. This unit is available as a separate mechanism for equipment makers and users who have a feeding problem with small parts.

BREVITY—Identify by IEN - 624 if you write the maker

## DRIVE . . Speed reducers, worm and gear design, 12 size groups

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.



**Series T and AT** are recent additions to the company's Reductor line of worm-and-gear speed reducers. The new design is available in twelve size groups and is stocked with other designs that make up the complete line which covers a range of ratios from 1 to 4,000 to 1. Worms are made of case-hardened steel with ground and polished threads. The worm-wheels are bronze. Shafts ride on tapered roller bearings or ball bearings in cast-iron housings.

**Smallest** of the new units is made in a range of ratios between 5 and 30 to 1 with output rated at .46 to .10 hp. on 1,800-rpm. input speed. Largest of the new design is in a range between 12 and 60 to 1 with output rated at 9.28 to 2 hp. on 1,800-rpm. input.

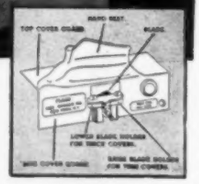
**Catalog 55**, pocket size with 388 pages, illustrates, lists and specifies all sizes in the present line with a selection table as one part of the company's line of products.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

**FIND WHAT YOU WANT?**
See our suggestion for the index, page 102

BREVITY—Identify by IEN - 625 if you write the maker

*Amazing*
# FLASH BOX OPENER
**Opens Any Carton Quicker . . . Cleaner**




Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

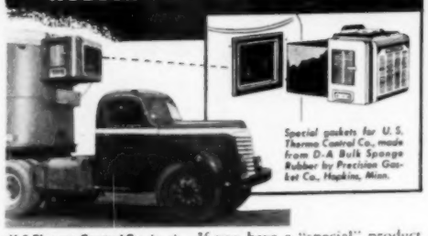
**THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:**
Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price
**$1.75**

**FLASH BOX OPENER CO., Inc.**
52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 626 if you write the maker

# DURKEE-ATWOOD BULK SPONGE RUBBER FOR "SPECIAL" JOBS



Special gaskets for U. S. Thermo Control Co., made from D-A Bulk Sponge Rubber by Precision Gasket Co., Hopkins, Minn.

**U.S. Thermo Control Co.**, leading producer of mechanical truck refrigeration units, utilizes D-A Sponge Rubber for gaskets between trailer body and cooling unit. This soft, resilient sponge rubber absorbs highway vibration, compresses tightly to keep cold in, dust and heat out.

*D-A Dur-Tite Sponge Rubber Stripping: amazingly versatile, self-adhesive, easy to apply. In any width up to 36", thicknesses to 1/16".*

If you have a "special" product problem—vibration, noise, dust, temperature, moisture—D-A's Bulk Sponge Rubber can save you production time and money. Used for gasketing, it die-cuts quickly, cleanly, even into irregular shapes . . . applies swiftly for air-tight, dust-tight, moisture-tight bonds. As an insulator, D-A Sponge Rubber can be cut into sound-deadening "blankets" . . . or used as weatherstripping. Available in any specified length, 1/8 to 1 inch thicknesses, up to 36 inch widths. Call your mill supply house or write direct.

**DURKEE-ATWOOD COMPANY**
Dept. 57, Minneapolis 13, Minn.

BREVITY—Identify by IEN - 627 if you write the maker

# CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

**SOLD AT A LOW COST**
. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

## BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

**CAPCO**

*Be sure to write for illustrated literature and prices.*

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 629 if you write the maker

# Here is RELAY EXPERIENCE!

Over 17,000 copies of this famous 640-page Struthers-Dunn RELAY ENGINEERING HANDBOOK are now in use throughout the world! Replete with more than 1100 illustrations it is an ideal reference manual for everyone concerned with relay or timer application, use or maintenance. *Price $3 per copy.*

**Now in 4th printing!**

## Here is YOUR QUICK GUIDE TO RELAY SELECTION

Write for your free copy of Struthers-Dunn's "Quick Guide to Relay Selection." This handy, 32-page booklet contains condensed catalog and specification data on the most widely used of Struthers-Dunn's 5,348 relay and timer types. Makes it easy to select exactly the right type for your application.

Fit the relay to the job—NOT the job to the relay!

**STRUTHERS-DUNN, INC., 150 N. 13th St.**
**Philadelphia 7, Pa.**

# STRUTHERS-DUNN

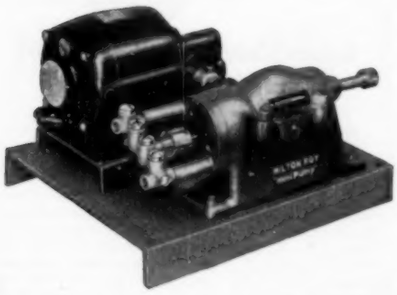
**5,348 Relay Types**

BREVITY—Identify by IEN - 630 if you write the maker

*Announcing the Arrival of* **"miniPump"**

**The Newest Milton Roy "Baby"**

**Mother:** —the necessity for precisely metering and pumping liquids in minute quantities.
**Father:** —the one and only Milton Roy double ball-check design.
**Weight:** —42 lbs.
**Capacity:** —3—800 ml/hr
**Pressure:** —up to 1000 psi.



"miniPump" handles clear liquids in minute quantities at pressures up to 1000 psi. It is a true Controlled Volume Pump, incorporating the exclusive Milton Roy double ball-check liquid end in minified form with a fractional hp motor driver. As with all Milton Roy Pumps "mini" is a positive displacement, precise metering unit.

The liquid end is heat treated type #20 stainless steel, with stainless steel, glass or synthetic sapphire ball-checks, to handle most corrosives. Chamber dispiacement, or scavenging, is complete over the full range of stroke length adjustment. Capacity is readily varied while operating, from zero to maximum, by a screw and graduated scale adjustment.

"miniPumps" are available in Simplex, Duplex and Multiplex models with motor drive, also as single units powered by 1½" reciprocating air pistons.

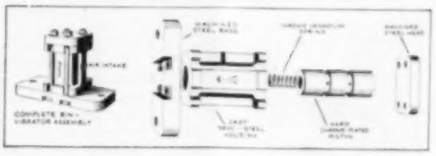
If yours is a problem of pumping clear liquids in precisely metered volumes and very small quantities by all means investigate—see what Milton Roy's new "miniPump" can do for you.

**MILTON ROY COMPANY**
**1302 E. MERMAID LANE • PHILADELPHIA 18, PA.**

BREVITY—Identify by IEN - 632 if you write the maker

## VIBRATING . . Pneumatic unit promotes flow from bin, hopper, chute

**Source: CLEVELAND VIBRATOR CO.**
**2736 Clinton Ave., Cleveland 13, Ohio**



**Type F** in the company's line of pneumatic vibrators is available in a new simplified design as shown in the illustration. A steel base mounts a semi-steel cylinder housing which encloses a chrome-vanadium spring and a chromium-plated piston under a steel head. The base bolts to the wall of a bin, chute to promote flow or dry materials, prevent arching.

**Six sizes** employ 1¼ to 4-in. pistons, operate on 8½ to 54 cfm. at 80-lb. pressure. Overall height is about 5¾ to 15¼ inches. Width is 3 to 7½ inches. Base length is 6 to 15 inches. Weight is about 9 to 185 pounds. Operation is at 2,100 to 750 strokes per minute in the range of sizes.

BREVITY—Identify by IEN - 633 if you write the maker

## TESTING . . Radiation detectors for portable application in a plant

**Source: GENERAL ELECTRIC CO.**
**1949 Electronics Park, Syracuse 1, N. Y.**

**Detail information sent upon request**

**Four instruments** have been developed by the company's Electronics Division for detection of radio activity in given areas. They include a portable alpha survey meter, an explosion-proof ionization chamber for Class 1 Group D hazardous locations, a beta-gamma survey meter and a radiation monitor.

BREVITY—Identify by IEN - 634 if you write the maker

## COMMUNICATING . . Mobile radio for two way talk from car or truck

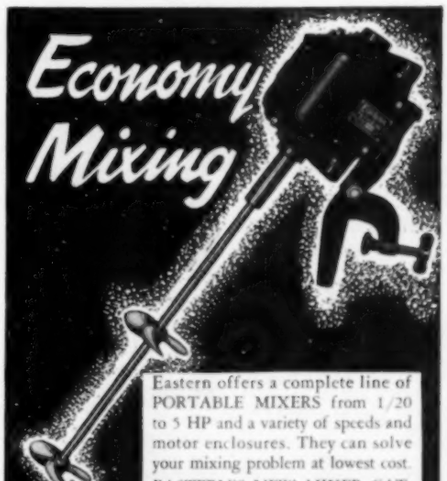
**Source: MOTOROLA INC.**
**4543-47 Augusta Blvd., Chicago 51, Ill.**

**Uni-Channel** Sensicon Dispatcher is a new assembly of two-way radio equipment to connect cars and trucks with a central office that handles orders and messages. The equipment operates in the 25-60 or 152-174-megacycle bands. It is designed for conversion in the event of change in FCC allocation.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 635 if you write the maker

# Economy Mixing



Eastern offers a complete line of PORTABLE MIXERS from 1/20 to 5 HP and a variety of speeds and motor enclosures. They can solve your mixing problem at lowest cost. EASTERN'S NEW MIXER CATALOG 500 GIVES COMPLETE MIXER SELECTION INFORMATION. WRITE TO DEPT. RD

**Eastern INDUSTRIES INC.**
REGENT ST. EAST NORWALK, CONN.

BREVITY—Identify by IEN - 636 if you write the maker

# Dependable FIRE PROTECTION

**STARTS WITH ANSUL *water-tight* CONSTRUCTION**

CUTAWAY VIEW ANSUL MODEL 20-B

The new, improved Ansul Model "B" Extinguishers have the greatest fire-killing ratings* ever attained by hand portable fire extinguishers. In addition, WATER-TIGHT CONSTRUCTION, (Exclusive with ANSUL) has resulted in far greater dependability than any other dry chemical extinguisher.

**Exclusive Features:** Patented Nozzle assures most effective stream pattern. . . . Best results by inexperienced operators. Corrosion resistant construction throughout. Easy on-the-spot Recharging (No tools needed). Ansul "PLUS-FIFTY" Dry Chemical used exclusively. Field tested by thousands of satisfied customers.

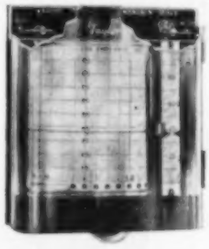
Send for file No. 629. You will receive a variety of helpful printed matter. Included is our latest catalog.

**Factory Mutual Laboratory Reports of Examinations and Tests.*

**ANSUL CHEMICAL COMPANY**
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS ON ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 637 if you write the maker

**New Taylor TRANSET* recorder gives**



# 30-DAY CHART RECORD ON 4⅜ x 5 PANEL

NEW MIDGET (4⅜" x 5") pneumatic TRANSET Recorder Receiver for flow, liquid level, pressure and temperature, greatly simplifies the most complicated central control problems. Indicates and records in same space required by conventional-sized indicator alone. Eliminates receiver wings on most central panels. Gives you:
**1. Automatic-manual unit**
**2. Remote set-point adjustment 3. Valve position indication 4. Chart rewind mechanism (optional)** . . . and many other advantages. For complete details on the four models available, SEND FOR **Bulletin No. 98079.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

*Registered Trade-Mark

**TAYLOR INSTRUMENTS MEAN ACCURACY FIRST**

BREVITY—Identify by IEN - 638 if you write the maker

**LABOR COSTS CUT 36% PER TON DESPITE DOUBLING OF WAGE RATES!**

*Baker Trucks* help Southern States Iron Roofing Company Increase Production with Lower Manufacturing Costs

**How BAKER TRUCKS work** with new production equipment to provide increased output at lower per-ton cost, is shown by this company with 10 branches, using a total of 12 Baker Trucks. Two Baker 6000-pound Fork Trucks, and a traveling crane, require only about 10 minutes to unload a truckload of 27 aluminum coils, weighing over 40,000 pounds. In another 20 minutes, the Baker Trucks warehouse the entire load.

From storage, the trucks move the coils to cutters, which shear the metal in 6- to 12-foot lengths. These sheets are palletized and delivered by truck to the presses at working height. These new high-speed presses handle some 7,000 sheets in eight hours—150% more than former equipment. Processed roofing sheets are transported to storage and later to shipping carriers by the fork trucks.

Although wage rates have doubled, direct labor costs have been reduced about 36% from former methods using hand labor and slower presses.

*Write for information*

**BAKER INDUSTRIAL TRUCK DIVISION** *of The Baker-Raulang Company*
1326 West 80th Street • • Cleveland 2, Ohio

**Baker INDUSTRIAL TRUCKS**

BREVITY—Identify by IEN - 639 if you write the maker

## Dollar and Cents Angle

### on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

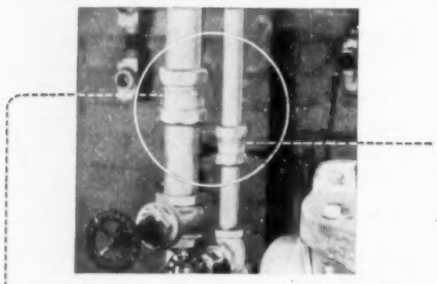
These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

**FAFNIR** BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 640 if you write the maker



## "FLEXIBLE-TIGHT" JOINTS FOR FACTORY PIPING

For piping up to 2" in diameter, Dresser Style 65 "No-Thread" Fittings provide quick, permanent connections. On equipment piping, on gas, oil, water, air lines, these handy joints stay tight despite vibration, expansion and contraction. No pipe threading, no exact pipe aligning. The only tool needed is a wrench. Write today for catalog.

**DRESSER** "NO-THREAD" FITTINGS

Dresser Manufacturing Division (One of the Dresser Industries), 59 Fisher Ave., Bradford, Pennsylvania. In Texas: 1121 Rothwell St., Houston. In Canada: 629 Adelaide St., W., Toronto. Sales Offices: New York, Chicago, Houston, San Francisco.

BREVITY—Identify by IEN - 641 if you write the maker

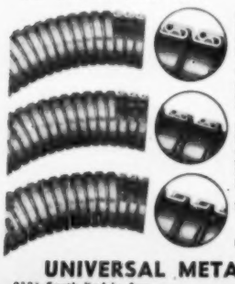
Any Type, Any Size . . . Any Metal

## UNIVERSAL *Flexible* METAL HOSE

**EXHAUST • SUCTION • BLOWER HOSE CONDUIT • PRESSURE HOSE • FITTINGS**

Universal has the exact type and size flexible metal hose you require for conveying solids, fluids, or gases at all temperatures and pressures. Universal gives you extra dividends in performance at no extra cost—trouble-free service, ease of handling, long life. Universal Metal Hose has been tested and proved through years of use for flexibility, strength, protection from leaking, resistance to corrosion, heat, constant motion and vibration. Simplify your selection, step-up efficiency at a saving. Check UNIVERSAL HOSE *Now!*

•



INTER-LOCKED HIGH PRESSURE HOSE — Four-wall construction with heavy asbestos packing. Sizes to 12" diameter.

INTER-LOCKED EXHAUST AND BLOWER TUBING—Heavy-duty or light-weight types. Sizes to 24" diameter.

SQUARE-LOCKED LOW PRESSURE TUBING—For such applications as exhaust hose for small engines, flexible spouts, industrial vacuum cleaner tubing, etc. Sizes to 3" diameter.

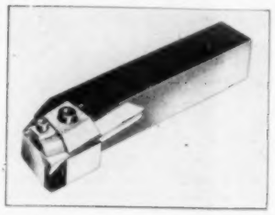
**Send specifications today —** Ask for Catalog U-101 describing *all* types of Universal Metal Hose available

**UNIVERSAL METAL HOSE CO.**
2131 South Kedzie Ave. Chicago 23, Ill.

BREVITY—Identify by IEN - 642 if you write the maker

## LATHE TOOL . . Carbide bit holder takes triangular bit, includes breaker

**Source: EVEREDE TOOL CO.**
**2002 N. Parkside Ave., Chicago 39, Ill.**



**New holders** for turning, facing, boring operations make up a line that takes triangular bits and includes an adjustable chip breaker that overlaps the bit in desired amount. Included with the holders is a bit-grinding jig that presents the bit to a grinding wheel.

**Four sizes** for engine lathes have ½ by 1-in. to 1 by 2-in. shanks, 6 to 10 in. in length for $\frac{7}{16}$ or $\frac{9}{16}$-in. bits. Eight sizes for turret lathes have ¾ by ¾-in. to 1½ by 1½-in. shanks, 6 and 8 in. in length, also for $\frac{7}{16}$ and for $\frac{9}{16}$-in. bits.

BREVITY—Identify by IEN - 643 if you write the maker

## BRAZING . . Laminated metal combines brazing alloy and base metal

**Source: D. E. MAKEPEACE CO.**
**50 Dunham St., Attleboro, Mass.**

**Basic price sheets dated November 1**

**Tri-Metal** is a new combination by the company of a center strip of base metal such as brass, copper, nickel and an outside layer on each side of silver brazing alloy. The combination is made in ingot form and then rolled to finish size.

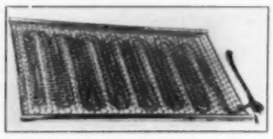
**It is suited** particularly for brazing carbide tips to tool shanks and bodies. The central base metal acts as a cushion under the tips. The single laminated material replaces separate pieces of base metal and brazing alloy previously required for this purpose.

**The material** is available in strips and in individual pieces cut to standard sizes. The company has prepared basic price sheets that will be mailed on request naming thicknesses, combinations, quantities and list prices.

BREVITY—Identify by IEN - 644 if you write the maker

## HEATING . . Coiled wire mat encloses heating element for comfort

**Source: WALTER B. SNOOK ENTERPRISES**
**749-53 Loma Verde Ave., Palo Alto, Calif.**



**Hard steel wire** is formed into coils surrounding a metal-sheathed electric element and is assembled in a metal frame with aluminum tubular sides in this new heating mat. The unit measures 16 by 27 inches. The element operates on 110-volt current and is rated at 280 watts. A three-wire rubber-covered extension cord provides safe connection, permits employing mat on wet floor. List is $21.50.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 645 if you write the maker

## SEND FOR BULLETIN... on 2846 Stock Items of Stainless Welding Fittings

Bulletin S-310 gives specifications of the world's most complete line of stainless welding fittings, made by specialists having almost two decades of experience in their manufacture.

*FLOWLINE* fittings are available from stock—2846 stock items with various wall thicknesses, in sizes from ½" through 12". They are cold formed by the exclusive Welding Fittings process; annealed, cleaned bright, and passivated.

Every fitting is marked with trade mark, type of material, size, schedule, and wall thickness. The heat number of the metal from which it is made is permanently stamped on each fitting—actual analysis and physical properties are therefore always available.

**FLOWLINE** STAINLESS WELDING FITTINGS

STAINLESS STEEL TYPES 304, 316, 347 • MONEL • INCONEL • NICKEL

**WELDING FITTINGS CORPORATION,** NEW CASTLE, PENNSYLVANIA
World's Largest Manufacturer of Stainless Welding Fittings

BREVITY—Identify by IEN - 646 if you write the maker

## ALL THESE ADVANTAGES ARE EXCLUSIVELY YOURS WITH RIC-WIL PREFABRICATED INSULATED PIPING SYSTEMS

- HIGH EFFICIENCY INSULATION
- PREFABRICATED AND SEALED SECTIONS
- FLEXIBILITY IN INSTALLATION
- PREFABRICATED ACCESSORY UNITS
- DEPENDABLE LONG LIFE

Take advantage of these exclusive Ric-wiL features to lower your installation, operation, and maintenance costs. Forty years of design and installation "know-how" give Ric-wiL Insulated Piping maximum dependability at the lowest possible cost.

Write today for your copy of Ric-wiL Bulletins 480-4 and 480-5. They contain full technical and engineering data on all Ric-wiL products.

**RIC-WIL** INSULATED PIPING SYSTEMS
OVERHEAD — THE RIC-WIL COMPANY - CLEVELAND, O. — UNDERGROUND
FOR FORTY YEARS THE GREATEST NAME IN INSULATED PIPING SYSTEMS

BREVITY—Identify by IEN - 647 if you write the maker

## PROVED IN PERFORMANCE

### Grinnell-Saunders Valves with CHEMICALLY INERT KEL-F* DIAPHRAGMS

(Pat. App. For)

Grinnell-Saunders Diaphragm Valves with KEL-F Diaphragms are living up to every promise made for them. KEL-F's resistance to chemical action, low cold flow, wide range of temperature application and exceptional flex life have combined to make it the most important diaphragm development in years. Read what users are saying . . .

**Typical performance reports . . .**

1. Chlorine and HCl gas with small amounts of acetic acid and acetyl chloride at 302°F. for 900 hours. Very much superior to material it replaced.
2. Mixed aromatic and ketone solvents at 230°F. and 10 psi for three months. No sign of deterioration.
3. Chlorinated organic chemical at 158 to 194°F. and 30 to 40 psi for nine months. No failure, no shutdown, no replacement.
4. Chromyl chloride at ambient temperature and 15 psi. Diaphragm condition good at end of thirty days' test.

**Complete information sent on request.**

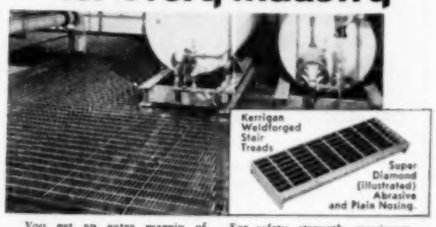
*KEL-F is the registered trade name for polytrifluorochlorethylene, an exceptional stable thermoplastic produced by M. W. Kellogg Co.

**GRINNELL**
WHENEVER PIPING IS INVOLVED

**Grinnell Company, Inc., Providence 1, R. I.**
Branch offices in principal cities.

BREVITY—Identify by IEN - 649 if you write the maker

# A SAFER, OPEN STEEL STRONGER FLOOR for every industry




You get an extra margin of safety with Kerrigan Weldforged steel flooring and stair treads. Continuous spiral cross bars, slightly above bearing bars and alternating right and left, leave no slick spots. Cross bars are Weldforged into bearing bars to form a one-piece unit of great strength.

For safety, strength, maximum light and ventilation, easy installation and maintenance, always specify Kerrigan Weldforged grating and stair treads. Its uses are many, indoors and out—open flooring, stair treads, sidewalk doors, catwalks, subway grating . . . to name only a few.

*Send today for latest catalog — Write Dep't. 22*

**Weldforged** GRATING DIVISION

**KERRIGAN IRON WORKS, INC.**
NASHVILLE, TENNESSEE
GENERAL SALES OFFICE, 274 MADISON AVE., N.Y.C.

BREVITY—Identify by IEN - 650 if you write the maker

# How to save up to 6c per man-hour

EDMONT CASES NO. 207 & 183

**HANDLING SHEARED SHEETS**

**Problem:** Shearing 20 ga. 2' x 6' steel sheets, canvas gloves lasted only 4 hours. Cost exceeded 10c per man-hour.

**Solution:** Edmont-recommended Grab-it natural rubber treaded gloves which resist cutting. Average 12 hours wear, costing 4-1/5c per hour.

Grab-it Natural Rubber Treaded—over all or palm and thumb only.

**Problem:** In stacking steel sheets, nap-out double palm gloves averaged 8 hours wear. Cost exceeded 5c per man-hour.

**Solution:** Edmont-recommended natural rubber treaded Grab-it gloves with safety cuff averaging 34 hours service at cost of 1½c per hour.

EDMONT CASE NO. 159

Redmont: Extra heavy over-all coating of NEOX. One-piece, seamless wearing surface over palm and thumb.

**OILY MACHINING CHIPS**

**Problem:** Removing sharp metal chips machined from castings, in the presence of oil and coolant, Detroit automobile maker found that standard weight neoprene-coated gauntlets averaged only 24 hours service because of blisters, split thumb seams and rapid wear. Cost exceeded 3c per man-hour.

**Solution:** Edmont-recommended Redmont gauntlets, coated with extra heavy duty NEOX (specially reinforced neoprene). Average service now 120 hours. Cost cut to 8/10c per hour.

**Free Test Offer:** Send us, on your business letterhead, a brief description of your operation, materials handled and temperature condition. Without cost we will forward samples of the type glove we recommend (in NEOX, natural rubber or plastic) for on-the-job test and report.

**Edmont** Manufacturing Co.
518 Orange St., Coshocton, Ohio

*World's largest maker of coated industrial gloves*

**Management:** It pays to promote the use of modern type coated work gloves — for greater safety, productivity and cost-savings to you or to employees who buy their own.

BREVITY—Identify by IEN - 652 if you write the maker

## THERMOMETER . . Resistance design measures superheat in steam or vapor

**Source: FOXBORO CO.**
**42 Neponset Ave., Foxboro, Mass.**

**New assembly** of two resistance thermometer bulbs and a reference condensing chamber provide a means to actuate one of the company's electronic Dynalog recorders to read the degree of superheat in steam or other vapor in a pipe line. The chamber, shown assembled in the illustration, applies vertically in the pipe line so its small vented condensate chamber will be heated by the superheated steam or vapor. The vent outlet permits escape of non-condensible gases.

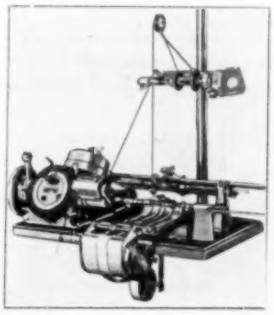
**Action** is sufficiently sensitive so full-scale pen travel at the recorder can cover a range maximum at 5 deg. of superheat. Maximum spread is limited by the thermometer bulbs which have a range to 600 deg. F. The chamber can be employed for superheat only or applied in combination with an element to measure and record partial pressure of air and other non-condensible gases in the steam.

**One bulb** is installed through the top of the chamber with its sensitive tip submerged in the boiling condensate. The other bulb is installed in the superheated steam outside the chamber. The difference between the two is the measure of superheat and this difference is employed to operate the recorder and a superheat control also if desired.

BREVITY—Identify by IEN - 653 if you write the maker

## WINDING . . Machine for wire coils includes paper interleaving attachment

**Source: COSA CORP.**
**626 Chrysler Bldg., New York 17, N. Y.**



**Model OOFA**—1/1 PE mounts on a bench, has capacity to wind coils to 3⅛ in. in diameter and from ⅝ to 3¾ in. in width. It will operate with automatic guiding on uninsulated wire from 24 to 48 AWG, to 15 AWG when hand guided. The paper-interleaving attachment lengthens the paper strip as the coil diameter increases. It will handle paper width from ¾ to 4 in. and paper length ranging from 3½ to 10 inches.

**Standard equipment** includes tailstock, spool stand, wire guide and a ¼-hp. motor for 110 or 220-volt single-phase ac. The wire guide advance is adjustable in stepless progression while the machine is standing or running. Reversal at the layer ends is automatic. Pull on the wire can be adjusted to hold constant on changing speed and reel diameter. The machine will stop on a preset number of turns or by wire breakage or when the reel is exhausted.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 654 if you write the maker

**For Every Industrial Need!**

# VACO

BREAK-PROOF
SHOCK-PROOF
**Screw Drivers**

FL 34 FLASHLIGHT DRIVER

**Fire Safe Handles**
Vaco S/B handles are slo-burning to reduce fire hazards. You'll like their "feel" as well as safety feature.

Large or small, square shank or round, extra long or stubby, there IS a Vaco screw driver for every screw used in your plant. Whether it's a regular, Phillips, Reed and Prince, screw holding, clutch head or Allen bit, Vaco makes 'em all. To find out how Vaco can serve you, write for:

**FREE 30-Page Catalog**

A gold mine of information on all types of drivers, both screw and nut. Full of tables to fit the screw driver to the screw. Fully illustrated with drawings of most screw heads, photographs of drivers and wide assortment of kits and specialty items. Order your copy, *today!*

**VACO** PRODUCTS CO. 317 E. Ontario St., Chicago 11
In Canada: Vaco Lynn Products Co., Ltd.
1212 Notre Dame St. W., Montreal 3, Quebec

MORE THAN 250 TYPES AND SIZES

BREVITY—Identify by IEN - 655 if you write the maker

## METALS RECLAIMED WITH VACUUM

In this plant large quantities of magnesium chips are collected from the floor and lathes every few hours. Fire hazards are reduced, and the reclaimed material pays for the Spencer equipment in a few months. If necessary the Spencer System can be arranged so that the materials are immediately deposited under water as a double precaution against fire hazards.

Spencer is also used for removing or conveying liquids, fumes, powders and hot materials.

356-K

150 USES FOR VACUUM . . . ASK FOR BULLETIN
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

BREVITY—Identify by IEN - 656 if you write the maker

# Cut Welding Costs...

## make him a full-time welder

When your welder has to stop work to prop or flop the work piece—or to climb all over a large piece . . . *that's* money out the window.

A Worthington-Ransome Positioner increases arc-time by tilting or rotating the work into position for continuous, economical downhand welding.

Welds are *better*, too—deeper penetration with higher current and heavier electrodes.

Capacities from 100 lb to 20 tons. Also: Turning Rolls from 3 to 75 tons, stationary and self-propelled.

Write for Bulletin 210C, Worthington Pump and Machinery Corporation, Welding and Assembly Positioning Equipment Division, Dunellen, N. J.

Y.O.2

**WORTHINGTON**

**WORTHINGTON-RANSOME WELDING POSITIONER**

BREVITY—Identify by IEN - 657 if you write the maker

# Operate at Full Voltage with ALLIS-CHALMERS Dry-Type TRANSFORMERS

MAXIMUM EFFICIENCY is obtained when motors and other equipment are operated at rated voltage. Allis-Chalmers dry-type transformers installed close to the load provide full voltage for efficient motor operation, bright, flicker-free lights, and full heating of thermal equipment. Long expensive runs of secondary copper are avoided, and distribution losses are minimized.

Transformers are easy to mount. Install them on walls, platforms, posts or directly on machines. No expensive fire-proof vaults are needed. Available in a wide range of sizes.

Write Allis-Chalmers, Milwaukee 1, Wisconsin, for bulletin 61B6382A.

A-3285

**ALLIS-CHALMERS** A-C

BREVITY—Identify by IEN - 658 if you write the maker

# Your Cost-Cutting Way to

## SPEED PRODUCTION SHIP MORE GOODS FASTER

## ...is in this 8-Question Check Chart

Business men the world over hail this famous check chart of 8 important questions which shows them the way to speed production, ship *more* goods *faster*, yet cut material handling costs 50% to 75%.

Can you answer questions like these?

**"What percentage of your product cost represents material handling?"**

**"Do you know how much *hand-handling* is costing you in production inefficiency?"**

These are a few examples of the check chart questions that bring into the open "hidden-handling" operations that may be adding too much to the cost of your product or service.

Write for *free* Check Chart. Find out how Automatic Electric Trucks move, lift and stack tons of your product with easy finger tip control . . . get rid of costly bottlenecks, speed the flow of goods in your plant . . . yet pay for themselves in as little as months. Send now for check chart.

Trade Automatic Mark
109 West 87th Street, Dept. A-5,
Chicago 20, Illinois

Trade Automatic Mark ELECTRIC TRUCKS

BREVITY—Identify by IEN - 659 if you write the maker

# RCS SUPER SAW

AIR COOLED

*Saves you more actual time, right on the job, than any other tool in your kit!*

*Roughing in for toilet bowl thru oak flooring completed in less than three minutes.*

- **NO STARTING HOLE NEEDED**...Simply place guide next to material and "rock" tool into an upright position.
- **CUTS RIGHT THRU IMBEDDED NAILS**...wood, plaster, iron pipe, sheet metal and most other materials are easily cut—even in cramped quarters!
- **FITS HEAVY DUTY ¼" or ⅜" DRILL**...as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.
- **BUILT FOR CONSTANT DUTY OPERATION**... Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable Oilite, phosphor bronze and high speed ball bearings throughout.

*Write for Bulletin No. 1H*

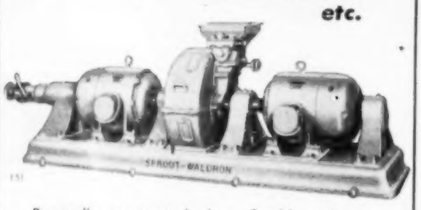
**R.C.S. TOOL SALES CORPORATION**
JOLIET, ILLINOIS, U.S.A.

BREVITY—Identify by IEN - 660 if you write the maker

SPROUT WALDRON MUNCY, PENNSYLVANIA

# ATTRITION MILLS

**for SHREDDING GRANULATING PULVERIZING etc.**




Ruggedly constructed, these flexible units are well adapted to intensive or high capacity assignments requiring up to 300 connected h. p.

S-W heavy duty Attrition Mills are standard in processing industries for a great variety of size reduction jobs. Write today for literature to Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

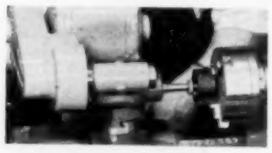
Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

**SPROUT-WALDRON**

BREVITY—Identify by IEN - 661 if you write the maker

## GRINDING . . Tool post machine for internal work on a lathe, 1/6 hp.

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.



**New machine** mounts on the carriage of a lathe, is held in place by the toolpost. Its ball-bearing spindle connects to the ⅙-hp. 3,450-rpm. motor through two belts and a countershaft which also rides in ball bearings. Built-in oil wells provide lubrication. The belts and countershaft are protected under a guard in compact arrangement.

**Four arbors** are standard equipment, the longest with capacity to grind a hole to 3⅞ in. in depth. Four grinding wheels, also supplied, are ¼ in. in face width, ¼ in. bore and ⅝ to 1 in. in diameter. A ⅛-in. chuck is included.

BREVITY—Identify by IEN - 662 if you write the maker

## DRINKING FOUNTAIN . . Stainless unit for wall assembly, insulated plumbing

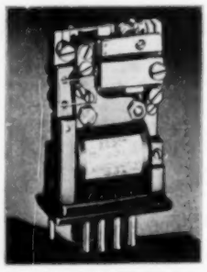
Source: EBCO MFG. CO.
399-403 W. Town St., Columbus 8, Ohio

**New fountain** mounts a No. 12000 bubbler and valve-equipped filler faucet for glasses, pitchers. It is known as Model SF-145 and is supplied ready for installation including a 1¼-in. waste trap and shutoff valve. The plumbing is concealed and is packed in rock-wool insulation to prevent condensate drip.

BREVITY—Identify by IEN - 663 if you write the maker

## RELAY . . Electric polarized design will operate on feeble signal impulses

Source: C. P. CLARE & CO.
4717-21 W. Sunnyside Ave., Chicago 30, Ill.



**Characteristics** of this polarized relay, which the company is now distributing for its English manufacturer, include an efficient magnetic circuit, damped compliance mountings for the side contacts, an armature hinged at its center of gravity on springs, rigid construction. Fine adjustment is provided for bias by a movable magnetic member.

**Three sizes** are known as Types 3, 4 and 5. They weigh 22, 11.8 and 4.8 ounces. They are illustrated and described in Bulletins 110, 111 and 112.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 664 if you write the maker

# FLO-MASTER

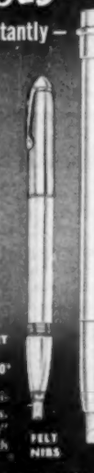
FOUNTNBRUSH

Marks BOLD — Writes *fine*

Ink Dries instantly — won't rub off

ON: METAL, CELLOPHANE, GLASS, FABRICS, WOOD, PLASTICS, LEATHER, WAXED PAPER

FOR: PARTS, PIPES, PATTERNS, INSPECTION, ADDRESSING, INVENTORY, STOCK BINS, SHELVES




POCKET SIZE 6½ in. $3.00*

KING SIZE 8½ in. $4.00*

Precision-built of aluminum. Inks in all colors. Cap of "King Size" may be screwed to bench to serve as stand.

Ask your supplier or write to Cushman & Denison Mfg. Co., 135 West 23rd Street, New York 11, N. Y.

*Slightly higher in West and Canada

BREVITY—Identify by IEN - 665 if you write the maker

# DRASTICALLY CUT YOUR RISING PLANT MAINTENANCE COSTS!

THESE FREE BOOKLETS PROVIDE FACTS YOU NEED ON MODERN SCAFFOLDING

This detailed information will prove to you that either Waco Rolling Towers or Waco Scaffold Jacks are far superior to the ordinary scaffolding you are accustomed to using. Today's time-consuming plant maintenance problems call for special, up-to-date equipment. You'll find the answer in Waco Jacks or Towers.

WRITE WACO TODAY

**WILSON-ALBRECHT CO., INC.**
3555 WOODDALE AVENUE
MINNEAPOLIS 16, MINNESOTA

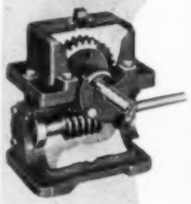
*Also Manufacturers of Aluminum Ladders and Swing Stages*

BREVITY—Identify by IEN - 666 if you write the maker

# simplified installation

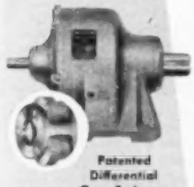
*. . . one of the reasons design engineers say "Yes"*

WHS WINSMITH SPEED REDUCERS



Worm Gear Reducers

Helical Gear Reducers



Patented Differential Gear Reducers

Position or space limitations, imposed on a speed reducer by the design of your equipment, need present no problem . . . need not involve a specially engineered unit.

There's a compact, fully standardized Winsmith reducer (from fractional to 85 H.P.) for practically any condition, no matter how individual. Simplifying your design and installation are extensive Winsmith provisions for horizontal, vertical or flange mounting; diversified shaft positions and alternate directions of rotation.

Such adaptability not only simplifies design problems for the primary equipment maker, but for the user as well. Often, a deficient "special" reducer can be replaced with a fully standard Winsmith model.

**FREE** Informative folder "Save through Standardization". Write.

50th WINSMITH ANNIVERSARY

**WINFIELD H. SMITH CORPORATION**
10 Davis Street
SPRINGVILLE (Erie County), N. Y.

BREVITY—Identify by IEN - 668 if you write the maker

# REALOCK

## IS TAMPER-PROOF

Realock Fence gives your plant property tamper-proof protection against trespassing, arson, theft and other costly hazards. That's because essential fittings are designed to permit the removal of bolts from the inside only.

Stoutly constructed of steel wire, heavily galvanized, Realock Fence is weather-resistant, extra durable and practically maintenance free. The Wickwire Division will not furnish integral arms as shown, but will substitute a malleable base with pressed steel arms. For complete details refer to Sweet's Catalog. For free estimate consult your classified telephone directory — or write direct.

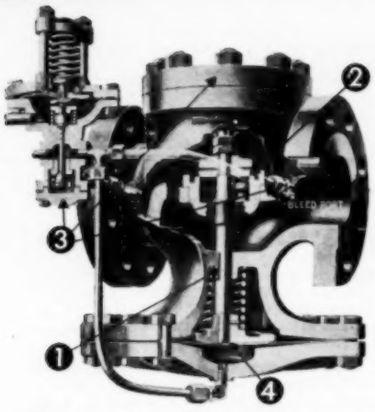
**REALOCK FENCE** CF&I

WICKWIRE SPENCER STEEL DIVISION 361 Delaware Ave., Buffalo 2, N.Y.
THE COLORADO FUEL & IRON CORP. Continental Oil Bldg., Denver 2, Col.
THE CALIFORNIA WIRE CLOTH CORP. 1080 - 19th Avenue, Oakland 6, California
BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

BREVITY—Identify by IEN - 669 if you write the maker

# Here's Why SPENCE REGULATORS

## CUT COSTS . . . REDUCE MAINTENANCE




Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

**1. PACKLESS CONSTRUCTION** of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.

**2. DURABLE SECO METAL SEATS AND DISCS** resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*

**3. EASY TO CLEAN WITHOUT DISMANTLING —** The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*

**4. LONG-LIFE METAL DIAPHRAGMS,** under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

**FREE** BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

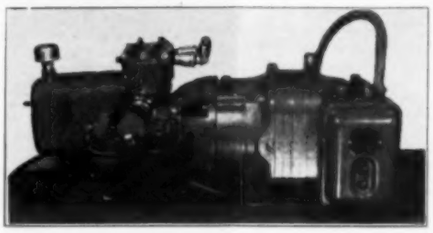
BU-104

**SPENCE ENGINEERING COMPANY, INC.**
**WALDEN, NEW YORK**

BREVITY—Identify by IEN - 671 if you write the maker

## PUMP . . Motor driven hydraulic, 1.8 to 8.25 gpm., pressure to 1,000 lb.

**Source:** HARCO INDUSTRIES INC.
21 Curtice St., Rochester 5, N. Y.



**New line** of vane-type hydraulic pumps, integral 1-gal. reservoir, direct-connected totally enclosed motor and manual, electro-pneumatic or hydraulic control is available in a range of 118 models. The smallest employs a 1/3-hp. motor to deliver 2.25 gpm. at 250-lb. pressure or a 1½-hp. motor for a rating of 1.8 gpm. on 1,000 pounds.

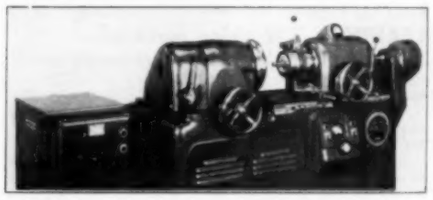
**Dimensions** of these two units are about 24 and 30 in. in length, 11 and 13 in. in clearance height. The largest takes a 1½-hp. motor for 8.25 gpm. at 250 lb., or a 5-hp. motor for 7.5 gpm. at 1,000 pounds. Dimensions for these two are about 26 and 33 in. in length, 12 and 14 in. in clearance height.

**The original design** was made by the company for its own use in the lines of hydraulically-operated equipment that it builds. The pump is now available for any applications in which the hydraulic pressure is required. Standard equipment includes the totally-enclosed motor, coupling, pump, reservoir, oil cooler, air filter, overload valve, pressure regulating valve and a three or four-way control valve or a combination.

BREVITY—Identify by IEN - 672 if you write the maker

## TESTING . . Sound checking machine for gear assemblies while operating

**Source:** NATIONAL BROACH & MACHINE CO.
5602 St. Jean Ave., Detroit 13, Mich.



**Model GSQ** is a recently improved machine in the company's Red-Ring line of sound-testing machines for gear assemblies. It mounts two operating heads, each with its own dc. motor and with control at a single central rheostat. The motors are connected to operate in the same direction at any selected speeds in the operating range of the mechanisms to be tested.

**Either one** can be set to act as the gear drive while the other serves as the variable brake or means for loading. The test load is indicated on an ammeter while a tachometer registers the speed. Two sizes in the line take internal or external gearing, one for gears to 14 in. in diameter and one to 24 inches. Operation is the same for both.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88*

BREVITY—Identify by IEN - 673 if you write the maker

# Here's the right iron for EXTRA HEAVY DUTY SOLDERING

**Super-powered at 700 WATTS!**

The ideal Iron for heavy soldering and large branders. 700 watts with tip 1¼ inches in diameter. Heavy duty construction from tip to cord terminal. Rugged long-life heating element with case made from solid hexagonal steel for extra strength. Operates on any cycle AC or DC current; Furnished for either 110 or 220 volts.

HEXACON MODEL 700
**$30.00**
**An Iron for Every Soldering and Branding Need**

There is a quality made Hexacon Iron for every use in manufacturing or repair work. Hexacon irons include screw tip, plug tip and hatchet types with tip diameters from ⅛" to 1¼"—from 40 to 700 watts. Write for illustrated catalog.

HEXACON

**HEXACON ELECTRIC COMPANY**
156 WEST CLAY AVE. • ROSELLE PARK, NEW JERSEY

BREVITY—Identify by IEN - 674 if you write the maker

# DEBURRING Made Easy!

WRITE FOR ABRASIVE BELT GRINDER-POLISHER CATALOG NO. 325

Hammond Machinery Builders

1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

BREVITY—Identify by IEN - 675 if you write the maker

## MONOGOGGLE

**GIVES PROTECTION**

**Plus Wide Angle Vision**

The Willson MonoGoggle gives front and side eye protection. Its one-piece plastic lens gives wide angle vision and has excellent impact resistance. The good fit provides all-day wearing comfort. Can be worn over prescription spectacles. For full information, ask your distributor for the Willson Industrial Safety Catalog or write direct.

WILLSON®
*Dependable Products Since 1870*

WILLSON PRODUCTS, INC., 217 WASHINGTON ST., READING, PA.

BREVITY—Identify by IEN - 676 if you write the maker

# The Aerotec Family OF DUST COLLECTORS

Aerotec **MECHANICAL DESIGN #3 RAS** . . . a collector that offers the last word in fly ash control by mechanical methods. It is constructed of standard unit building blocks, consisting of small diameter, permanent mold, cast aluminum tubes.

Because of the small diameter tubes (3"), exceptionally high efficiency is obtained even on extremely fine pulverized fuel, and the horizontal multi-tube outlet provides the perfect inlet for the . . .

Aerotec **ELECTRICAL PRECIPITATOR** . . . offered as a secondary to the mechanical, or as a complete collector in itself.

The Aerotec new pocket design, insures a dead zone surrounding the collecting electrode. A combination of these two units is now available as the . . .

Aerotec **SERIES COLLECTOR** . . . highest in collection efficiency on all types of dusts. A guaranteed efficiency of 97½% on most dusts, minimum weight and space per c.f.m. and a flat efficiency vs. load response.

*All inquiries should be sent to:*

*Project and Sales Engineers*
**THE THERMIX CORPORATION**
GREENWICH, CONN.
*(Offices in 28 principal cities)*

**THE AEROTEC CORPORATION**
GREENWICH, CONNECTICUT

BREVITY—Identify by IEN - 677 if you write the maker

ROLLAWAY SEMI-LIVE SKIDS AND JACKS

FEATURING THE RE-NU TOP

Steelbound Rollaway Skids combine the best features of bolted and welded designs. The frame supporting members are arc-welded, and the renewable hardwood deck is tightly clamped with steel bolts of extra tensile strength. Welded-in, heat-treated, steel connecting pin. Semi-steel rubber-tired or Flor-Savr wheels with Hyatt roller-bearings, heat-treated steel axles.

CAPACITIES: 1500, 2500, and 5000 POUNDS

YALE AND TOWNE ROLLAWAY JACKS are stocked at the Lanham Company's plant and are sold and shipped directly from Louisville for use with ROLLAWAY SKIDS.

SECTIONAL BINS — RE-NU TOP SKID PLATFORMS — SKID BOXES

THE LANHAM COMPANY

1405 S. 12th St., Louisville, Kentucky

BREVITY—Identify by IEN - 678 if you write the maker

## Kinkless Safeguard for Removable Parts

IF your product has removable parts which can be mislaid, dropped and broken, or lost, add usefulness and sales appeal at negligible cost by securing these parts with Bead Chain. Bead Chain provides the ideal safeguard for caps, covers, hasp pins, wedges, alarm hammers and other important parts. Strong, light, rust proof, completely flexible, it cannot kink, bind or jam. Free swiveling action makes Bead Chain especially adaptable for screw type parts. Made in five bead sizes, and in all metals and finishes. Attachments available for every need. For the finest retainers specify Bead Chain.

**THE BEAD CHAIN MANUFACTURING CO.**
59 Mountain Grove St., Bridgeport 5, Connecticut.

Manufacturers of: BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products; MULTI-SWAGE — the most economical method of producing small tubular metal parts for electronic and mechanical applications.

Trade Mark

BREVITY—Identify by IEN - 679 if you write the maker

## Increase production... cut costs... with this BOSTITCH T5 Tacker

You increase production and cut costs when you use the Bostitch T5 Tacker. Shoots in staples twice as fast as ordinary tacking. Leaves one hand free for better control of work. Easily fastens as close as 1/16" to internal corners. Permits untrained operators to outstrip the fastest worker with old-style hammer and tacks. Safer — no swallowing of tacks, no mouth infection. For complete details write for Bulletin 133, BOSTITCH, 452 Mechanic Street, Westerly, R. I.

**BOSTITCH** fastens it better, AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES

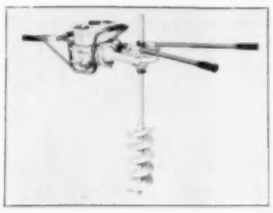
ALL TYPES OF STAPLES APPLIED BY MACHINES

Trade-mark "Bostitch" Registered U. S. Patent Office and Foreign Countries

BREVITY—Identify by IEN - 680 if you write the maker

## CONSTRUCTION . . Post hole drill with 6, 9, 12 in. auger, engine drive

**Source: McCULLOCH MOTORS CORP.**
**6103 W. Century Blvd., Los Angeles 45, Calif.**



**Earth Drill** is a new assembly of 5-hp. gasoline engine and worm-drive spindle to take interchangeable augers for post-hole digging. The unit is designed for two-man operation. It weighs 79 pounds. A swivel connection at the engine permits setting the spindle to dig vertically or at a desired angle. A 6-in. hole can be dug to 30 in. in depth in about 15 seconds. Also the engine can be detached and applied on a chain saw the company manufactures for timber cutting. The changeover requires about a minute. List of the drill without auger is $370.

BREVITY—Identify by IEN - 681 if you write the maker

## ISOLATING . . Rubber machine mount is channel design with rubber in shear

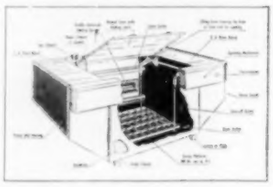
**Source: FINN & CO.**
**2848-52 Eighth Ave., New York 30, N. Y.**

**Central channel** made of steel is bonded to two strips of rubber and they, in turn are bonded to base angles in this new vibration - isolating machine mount. Finnflex Type 9 is the designation. Any length can be specified to a maximum of 18 inches. Four compounds of rubber rate 40, 50, 70 and 105 lb. per inch of length at ¼-in. deflection.

BREVITY—Identify by IEN - 682 if you write the maker

## CLEANING . . Washing machine removes chips, oil from small work

**Source: MAGNUS CHEMICAL CO.**
**1948 South Ave., Garwood, N. J.**



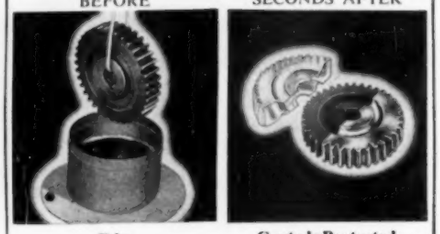
**Work platform** suspended by four motor-driven crank arms in the housing of this new Aja-Dip machine takes basket loads of small machined work to remove chips and light oil. The platform is reciprocated vertically to agitate the work while it is immersed in the cleaning solution with which the housing is filled. Baskets are loaded and removed through the top of the machine. Several sizes rate 75 to 10,000-lb. loads. Hot or cold cleaning solutions are employed.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 683 if you write the maker

## HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE — SECONDS AFTER



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**Fidelity Chemical Products Corp.**
470 Frelinghuysen Avenue, Newark 5, N. J.

BREVITY—Identify by IEN - 684 if you write the maker

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*You Buy Quality When You Choose Cannon Electric...*

Experience and know-how in designing and building electric specialties and signal equipment for 35 years and multiple circuit electric connectors for 25 years is a record for American industrial history.

That's why Cannon Electric serves industry so well in these fields. Representatives in principal cities, distributors everywhere.

Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt Street, Los Angeles 31, California. In Canada: Cannon Electric Company, Ltd., Toronto. World Export: Frazar & Hansen, San Francisco, Los Angeles and New York.

SINCE 1915

**CANNON ELECTRIC**

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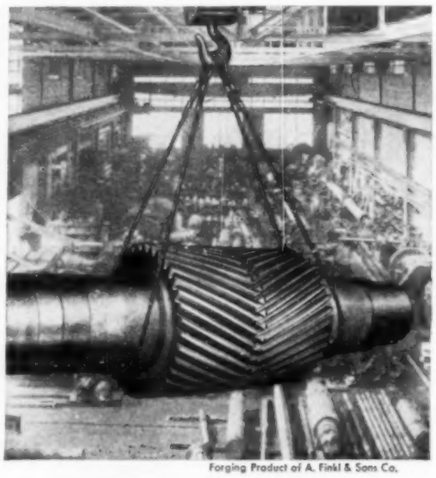
BREVITY—Identify by IEN - 685 if you write the maker



Forging Product of A. Finkl & Sons Co.

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*Apply this formula: THE SUM OF A DROPPED LOAD IS EQUAL TO ITS OWN VALUE AND THE VALUE OF WHAT'S BELOW IT—and you can estimate the worth of safe handling of any load.*

• Here for example we have 15,000 pounds of finished machined forging representing hundreds of man and machine hours, costly material, design and engineering time. Added up, it's a big investment. If it fell it could harm itself beyond repair and damage or destroy production machinery. Literally, put a big *DENT* in profits.

Worse still—it could seriously injure workmen. For these reasons good, safe slings—**ACCO REGISTERED WIRE ROPE SLINGS**—are tools worthy of top consideration of both safety and production men.

ACCO Registered Wire Rope Slings provide positive safety factors of 5 to 1. They are factory-made, proof-tested with a load double the rated capacity, then registered. This Register certifies that only Preformed Improved Plow Steel wires were used and that the ACCO-LOC Splices will develop 100% of the catalog strength of the wire rope. Only ACCO-LOC has 2 collars on each splice as an extra safety factor.

*Write today for your free copy of the ACCO Registered Wire Rope Slings "SAFE CAPACITIES" card, which includes a guide for discarding work-worn wire rope slings.*

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ACCO

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AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT

Registered WIRE ROPE SLINGS

*In Business for Your Safety*

BREVITY—Identify by IEN - 687 if you write the maker

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### — FILTER MASK —

**Easier to breathe through and talk through than an ordinary handkerchief . . yet filters non-toxic nuisance dusts as small as 1/25000 of an inch!**

- **Extremely light in weight — only 1 ounce complete.**
- **Self-adjusting to every face size.**
- **Simple in design with only 4 interlocking parts.**

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**THE GOGGLE PARTS COMPANY**
1468-70 W. 9th St. • Cleveland 13, Ohio

BREVITY—Identify by IEN - 688 if you write the maker

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*Mono-Cushion*
INDUSTRIAL VEHICLE TIRES

TOUGH ALL THE WAY THROUGH
CUSHION ALL THE WAY THROUGH

Easy-riding Mono-Cushions will save you plenty of money on repairs, cut vehicle downtime. These big, burly tires soak up more bumps and jolts than any other type of industrial tire, size for size. They greatly reduce maintenance on steering linkages, bearings, transmissions, universals, differentials—wherever shock or shock load is a factor.

Mono-Cushions will save you money in other ways, too. Your tire costs will be lower, for one thing. And Mono-Cushions will reduce load breakage and floor wear. Incidentally, your drivers like the easy ride and easy steering they get with Mono-Cushions.

*The leading manufacturers of industrial vehicles use Monarch Mono-Cushions as original equipment. Replacement tires available through the manufacturer of your equipment or his distributors.*

**THE MONARCH RUBBER COMPANY**
201 LINCOLN PARK HARTVILLE, OHIO

*SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS*

BREVITY—Identify by IEN - 690 if you write the maker

## PLATING . . Hydraulic loader-unloader takes work to and from plating machine

**Source: UDYLITE CORP.**
**1653 E. Grand Blvd., Detroit 11, Mich.**

**Hydraulic cylinder** pivoted on a floor plate operates a short section of track along an inclined way in this new loader-unloader between the track on the company's automatic plating machine and a closed loop of similar track beneath a chain conveyor mounted beside the machine. A motor drive indexes the chain conveyor to move it ahead in increments in step with the advance movements of the conveyor in the machine.

**Work suspended** from individual hangers is advanced a unit at a time to ride onto the track section in the machine. This actuates the hydraulic cylinder to move the work and track section up the incline to register in the conveyor track at the top of the incline. In-step action in forward increments of the chain conveyor moves the finished work from the section and places another ready for plating. Then the cylinder retracts to bring this piece and the track section back to register in the conveyor on the plating machine.

**The action repeats** on each forward movement of the machine. The unloader conveyor takes the work away for unloading and reloading at some convenient location within 200 feet. Each installation is designed for the job.

BREVITY—Identify by IEN - 691 if you write the maker

## COOLING . . Heat exchanger for cooling water in a closed circuit

**Source: OHIO CRANKSHAFT CO.**
**3802 Harvard Ave., Cleveland 1, Ohio**

**Model IWRI** is a new assembly of water reservoir, cooling coil, motor-driven circulating pump and the required controls to cool water in a closed circuit for service at a machine such as the company's induction heating and quenching equipment. The unit permits use of conditioned water free from lime and other objectionable foreign matter.

**The circulating water** is handled by a centrifugal pump rated at 50 gpm. at 52 lb. and driven by a 3-hp. motor. This pump with its motor, the reservoir and heat exchanger and the controls are assembled in a rectangular housing for installation at a level that will permit gravity return of the used recirculating water to the reservoir from a machine. A temperature-controlled valve on the shop line to the heat exchanger regulates flow of this water to hold required temperature in the water flowing in the closed circuit. A temperature-actuated relay on the controls to the machine served opens the machine-drive circuit in the event of excessive temperature in the closed circuit.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 692 if you write the maker

FOR YOUR
## STAINLESS STEEL FASTENERS... IT'S ALLMETAL
for quality and delivery

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

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**ALLMETAL SCREW PRODUCTS COMPANY, INC.**
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**CHICAGO MOLDED PRODUCTS CORPORATION**
1031 N. Kolmar Avenue
Chicago 51, Illinois

BREVITY—Identify by IEN - 694 if you write the maker

## For Accurate Inspection Of Difficult Shapes
### THE KODAK CONTOUR PROJECTOR, MODEL 2 SHOWS...

Few objects are too small or complicated for *complete* inspection under magnification with the Kodak Contour Projector. Deep recesses and surface details, *illuminated from the projection system itself,* stand out sharply and in natural color.

With unmatched versatility, it can be switched instantly from surface illumination to silhouette projection, or a combination of both. Any of six magnifications from 10× to 100× is available at the turn of a dial *without refocusing.* Your operator can work rapidly and efficiently, unhampered by the usual hoods or curtains.

Large parts? Sure! With a full 8" between lens and object and 6¾" from object to lamphouse at *all magnifications,* there's plenty of room. The lamphouse pivots to accommodate long parts. And the stage has 4" of easy, precise travel, vertically and horizontally.

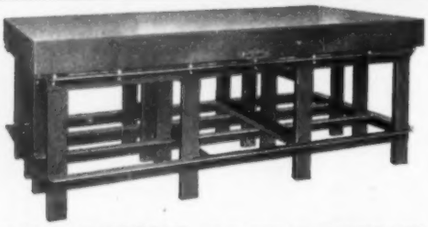
If you have an inspection or measuring problem where speed, accuracy, and convenience are important, it will pay you to investigate the Kodak Contour Projector. A new booklet giving detailed information will gladly be sent on request.

**EASTMAN KODAK COMPANY**
*Industrial Optical Sales Division*
ROCHESTER 4, N. Y.

Kodak

BREVITY—Identify by IEN - 696 if you write the maker

## SMOOTH and SQUARE for Layout, Inspection, Assembly



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Precision ground or planer finished, Challenge Layout Surface Plates provide a perfect surface. Sizes range from 12"x18" to 54"x144". All are made of semi-steel. Standard plate thickness is 6". All-steel stand is arc-welded for rigidity and has special leveling screws to level the plate and lock it securely. Plates of 8" thickness, special sizes, grooving, scoring, machining and slotting furnished on order. Write for full data on this and other Challenge equipment.

**THE CHALLENGE MACHINERY CO.,** GRAND HAVEN, MICH.

**SURFACE PLATE EQUIPMENT**
UNIVERSAL IRONS—4 Sizes
ANGLE PLATES—22 Sizes
V-BLOCKS—7 Sizes
BOX PARALLELS—18 Sizes

BREVITY—Identify by IEN - 697 if you write the maker

## True in 1899...True today.. You Get BETTER MARKING with Pannier "Master Markers"

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**THE PANNIER CORPORATION**
101 Pannier Building
Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 698 if you write the maker

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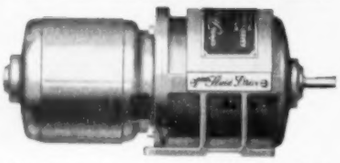


We want you to see for yourself how American Blower Type TM Gyrol Fluid Drive Units save you power, provide smooth acceleration, shock absorption and overload protection—all without cost or obligation to you.

We invite you to try a TM unit in actual production on your machine, in your shop.

Here's what to do. Write us direct. Describe the machine on which you want to use the TM unit and state horsepower of present motor. Then, we'll contact you and arrange installation and trial period.

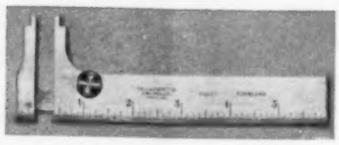
**AMERICAN BLOWER**
American Blower Corporation, Detroit 32, Michigan
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

*Serving home and industry* AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 699 if you write the maker

## GAGE . . Six inch slide caliper for inside and outside measurements

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.



**The slide** in this new stainless-steel caliper carries a knurled thumb piece with which the user can move it to make a measurement on work held in either hand. A knurled screw with a left-hand thread clamps the slide in given position. A stop prevents the slide from being pulled out of the stock. Jaw surfaces are straight inside and have rounded nibs, the latter for inside measurements.

**The gage** will measure outside dimensions or diameters to 4¾ inches. Inside range is ¾ to 5 inches. Scales on the slide read in 32nd and 64th inches. The reverse reads in 32nds.

BREVITY—Identify by IEN - 700 if you write the maker

## WRENCH . . Flare nut design in two sizes for ¾ to 1⅛ inches

Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.

**New wrench** is designed with a hexagon opening and is intended for use on fuel, hydraulic and gas lines in diesel and gasoline engines and refrigerating equipment. It is made of forged steel and is available in five sizes including three previously developed units. Each takes two nut sizes. The overall range is ⅝ to 1⅛ inches.

BREVITY—Identify by IEN - 701 if you write the maker

## FILTERING . . Bellows element unit made of stainless steel for a pipe line

Source: MICRO METALLIC CORP.
28-32 Sea Cliff Ave., Glen Cove, N. Y.

**The element** in this new filter is made up of an assembly of the company's bellows units which are available with porous stainless-steel walls ranging from .0002 to .0065 in. in opening sizes. The assembly is made in a required length to enclose the needed total of element units. Pipe connections top and bottom range from ¼ to 2 inches. Capacity ranges to 10,000 gpm. in the largest sizes the company can make to specification.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 702 if you write the maker

## PUT ON IN NO TIME ... STAY ON FOR ALL TIME—

*Electroline* WIRE ROPE FITTINGS

**These are outstanding advantages of Electroline fittings: Shorter installation time—no heat, acids or dangerous molten metal is required—unskilled labor, using ordinary mechanic's tools, make connections in a matter of minutes. And, these permanent wire-rope fittings prolong the life of rope by damping vibration and overcoming rope-fatigue at entrance to fittings—can be reclaimed and used over and over again.**

**Illustrated, pocket-size Catalog fully describes all advantages of Electroline wire rope fittings . . . send for your copy, today.**

**Electroline Company**
4121 SOUTH LA SALLE STREET
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BREVITY—Identify by IEN - 703 if you write the maker

## From Air Conditioning To Atomic Research

THESE SMALL SWITCHES ARE DOING A BIG JOB

Series 240 Rotary Switches

. . . now available in over 30 circuit variations for heater, motor and low-voltage A.C. electronic applications

Brand new only a few months ago, today in dozens of products, both civilian and defense. Series 240 Switches are proving the value of their exclusive combination of features:

- *Compactness* — unmatched by any comparable switch: base only 1½" high, 1¼" wide, 1" deep. Available in single hole mounting and bezel equipped models. Latter snaps into mounting hole for fast assembly with spring clips holding it firm.
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- *Entirely Enclosed* — for safety, and protection of working parts.
- *High Overload Capacity* — ratings are conservative: 7½ A, 240 V; 15 A, 120 V; 25 A, 120-240 V; 1H.P., 120 V; 2 H.P., 240 V. A.C. only. Underwriters' Laboratories Approved.
- *Peak Performance and Long Service Life* — thanks to ingeniously simple design, rugged construction, heavy silver contacts and long recognized "Diamond H" slow-break principle.

Write today for complete details on how Series 240 Switches will meet your needs.

**THE HART MANUFACTURING COMPANY**
203 BARTHOLOMEW AVENUE, HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 704 if you write the maker

## ELIMINATE VALVE LUBRICATION EXPENSE AND BOTHER

*Cameron* NON-LUBRICATED LIFT-PLUG VALVE

**The Best Features of Plug and Gate Valves Combined With New Cameron Innovations**

**NON-LUBRICATED** — no grease of any kind required to effect a seal; prevents contamination of line products; reduces chance for human error and need for maintenance. **PRESSURE SEALING** — when plug is seated, line pressure automatically forces seat into tighter engagement with plug — body distortions do not affect the seal. **UNIQUE LIFT-PLUG ACTUATOR**— a novel mechanical design which lifts, turns and reseats plug in continuous turn of a lever. **RENEWABLE SEAT AND PLUG**— easily replaced; permits any desired trim for corrosive or other specific services. **REPAIRS ON THE JOB** — can be completely overhauled without removal from line; no special tools or skill required. **EASY OPERATION** — requires less operating effort than other valve designs. **FORGED STEEL** — all parts, including body for most sizes, are press or drop forged from specification materials.

*Cameron* IRON WORKS, INC.
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EXPORT:
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BREVITY—Identify by IEN - 706 if you write the maker

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Foster matches sizes and specifications on any job. All material guaranteed—backed by a half century of specialized rail warehousing service.

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The Exact Lengths and the Exact Sections to meet all your needs. Also complete stocks of Light-weight Corrugated Steel Sheet Piling. Foster's new lower rental rates on all stand- and piling sections give you a low fixed expense as an added advantage when you bid on jobs; and you also get the famous FOSTER QUALITY GUARANTEE.

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Standard and Special Types Made for Your Particular Requirements

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BREVITY—Identify by IEN - 708 if you write the maker

For Automatic Feeding to Punch Presses—Press Brakes

A press brake equipped with Wittek No. 6-L Automatic Roll Feed

You Can't Beat WITTEK

Wittek Roll Feeds are made in standard models to meet every requirement in the automatic feeding of strip stock to punch presses or press brakes. The distinguishing feature is their simple and economical method of operation which does away with complicated parts thereby assuring *speed* and *accuracy* in the feeding of various kinds and thicknesses of material.

Wittek Adjustable Reel Stands are designed as companion units to Wittek Automatic Roll Feeds and are available in seven different models to handle *ALL* types of coiled strip stock and wire being fed to punch presses or similar production machinery.

*Write for complete descriptive literature.*

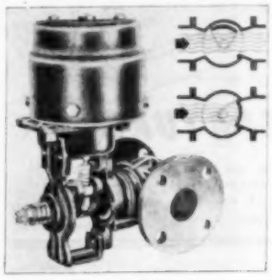
WITTEK Manufacturing Co.
4336 West 24th Place
Chicago 23, Ill.

Automatic ROLL FEEDS AND REEL STANDS

BREVITY—Identify by IEN - 709 if you write the maker

## VALVE . . Pneumatic operator for company's eccentric type plug valve

**Source: DEZURIK SHOWER CO.**
**49 River Ave., Sartell, Minn.**



**Three types** of power operation are now available for the company's eccentric-type plug valve in sizes from ½ to 3 inches. Each employs the Bendix - Westinghouse long-stroke diaphragm-type pneumatic operator. Assembly arrangement, interchangeable in the field, is for power to open or power to close. Required air pressure is dependent on line pressure through the valve but 50 lb. minimum is sufficient for maximum valve pressure which is nominal at 125 pounds.

**Manual control** for on-off action employs an air switch. Manual control with throttling action includes a dial indicator that permits setting the valve in throttling position from a remote location. Automatic control applies a positioner that can be actuated by standard pneumatic indicating and control equipment in which the instrument pressure controls the operation of a pilot valve that admits or cuts pressure at the operator.

**The valve** is equipped with an eccentric plug that closes down on a matching eccentric seat following a quarter turn from full-open position. The action is free from forcing, wearing and does not result in binding to obtain tight shutoff. The plug is metal-core rubber-face construction to conform to the valve seat even when there is foreign matter in the controlled fluid. No lubrication is required. Any metal can be specified for the valve construction to meet requirements.

BREVITY—Identify by IEN - 710 if you write the maker

## CONSTRUCTION . . Power shovel, tractor mounted, rates ½ cubic yard

**Source: FRANK G. HOUGH CO.**
**841 Sunnyside Ave., Libertyville, Ill.**

**Model HE** is a new small size in the company's line of tractor-mounted power shovels which covers an overall range to 1½ cubic yard. The new ½-yd. assembly provides four speeds between 1.8 and 14 mph. in forward direction and four between 3 and 23 mph. in reverse. The tractor as well as the shovel mechanism is built by the company. Accessory equipment includes a backfiller blade and a crane hook.

**Drive** is by a 34½-hp. Waukesha gasoline engine connecting to the rear wheels. Steering is at the front for turning radius of a little under 15 ft. to the tip of the bucket. Overall dimensions are 152 in. in length with the bucket down, 166 in. when it is in "carry" position, 70 in. in width over the rear axle, 65 in. in height over the hood. Maximum dumping clearance under the bucket is 91 inches. Angle of the bucket when it is dumped is 45 degrees. Detail information and illustrations in 6-page Bulletin, "Model HE."

BREVITY—Identify by IEN - 711 if you write the maker

## GRINDING . . Sharpening machine for milling cutters, from tools, saws

**Source: PRATT & WHITNEY DIVISION**
**49 Charter Oak Blvd., West Hartford 1, Conn.**

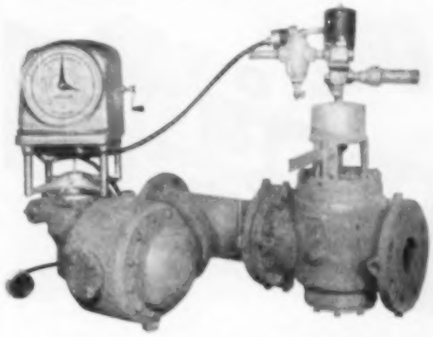
**Type R-6** with flute-length capacity to 4½ in. and Type R-8 for flutes to 10 in. in length are two new cutter and radius-grinding machines for general tool room use. Type R-6 will take B & S taper shanks to No. 9 and can be supplied to take to No. 12. Type R-8 has shank capacity to No. 12 B & S. Both machines are suited for sharpening and to grind cutters from solid blanks. Floor space measures 48 and 55 by 35 inches.

**Tools** that can be handled on either machine include die-sinking cutters, end mills, thread milling cutters, staggered-tooth mills, Keller cutters and tracers, tools for lathes, planers and shapers, indicator points, profiling cutters, reamers, slitting saws, radius and angle-milling cutters. Straight or spiral teeth can be ground, combinations of radii, angles and spirals can be handled to blend curves and lines perfectly and to produce draft angles as required.

**Circular S-455-5**, 8 pages, presents illustrated description of the two machines with examples of setups for wheel truing and for work. Specifications are included.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 712 if you write the maker



AUTOMATIC VALVES
for hard-to-reach places

Automatically operated jacketed valves, which have long been used with H & B Fluidometer metering systems, are now available for use where remote control is required without automatic batching features. See typical application above.

Valves of either straight, 3-way plug cock, or straight globe type are available for steam, air or hydraulic operation. These valves provide the solution to many problems of actuating valves in hard-to-reach places.

Write for Bulletin H-49.

HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

BREVITY—Identify by IEN - 713 if you write the maker

FREE FOR YOU

this fact-filled booklet on better ways to package your product

A handy reference manual prepared for you by the makers of KIMPAK* creped wadding. The work of technical experts, skilled engineers. Gives you the latest, safest methods of avoiding damage to products in shipment. For your copy, write to Dept. IEN, Kimberly-Clark Corp., Neenah, Wis.

KIMPAK CREPED WADDING comes in a wide variety of specifications to cover all Four Basic Methods of Interior Packaging. It's light, easy and pleasant to handle—clean and completely free of damaging foreign matter. KIMPAK absorbs up to 16 times its own weight in liquids within 30 seconds; takes continuous vibration and severe shock. Soft and flexible KIMPAK provides "Float Packaging"—the world's most effective shipping protection.

KIMBERLY-CLARK CORPORATION, NEENAH, WISCONSIN

*T. M. Reg. U. S. Pat. Off. and Can.

BREVITY—Identify by IEN - 714 if you write the maker

Hot—Warm—Tepid or Cool Water

MANY PROFITABLE USES
SAFE DEPENDABLE ECONOMICAL
OFF
HOT WATER
COLD
HOT
COLD WATER
POWERS
CONTROL WITHIN ½°F. Reported by Users
PRECISE CONTROL AT LOW COST

POWERS THERMOSTATIC WATER MIXER

Can It Solve a Problem for You?

Set a Powers Mixer for any temperature desired and forget it. Temperature remains constant regardless of fluctuations of *pressure or temperature* in water supply lines. Failure of cold water supply instantly shuts off delivery.

Is widely used for X-Ray and color film developing, hydrotherapeutic baths, chocolate enrobers and other processes requiring exact control. It is the safest regulator made for shower baths.

**CAPACITY**—10 gals. per min. at 45 psi. Dial diam. 3½". Pipe connections ½". Temp. Ranges: 65° to 115°F.; 60° to 125°F.; 75° to 175°F. *Write for Bulletin 358-H.*

**LARGER CAPACITIES** up to 1000 gpm. available in other types of controls. *Write for Cat. 3035.* (16A)

THE POWERS REGULATOR COMPANY
2787 Greenview Avenue, Chicago 14, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 715 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

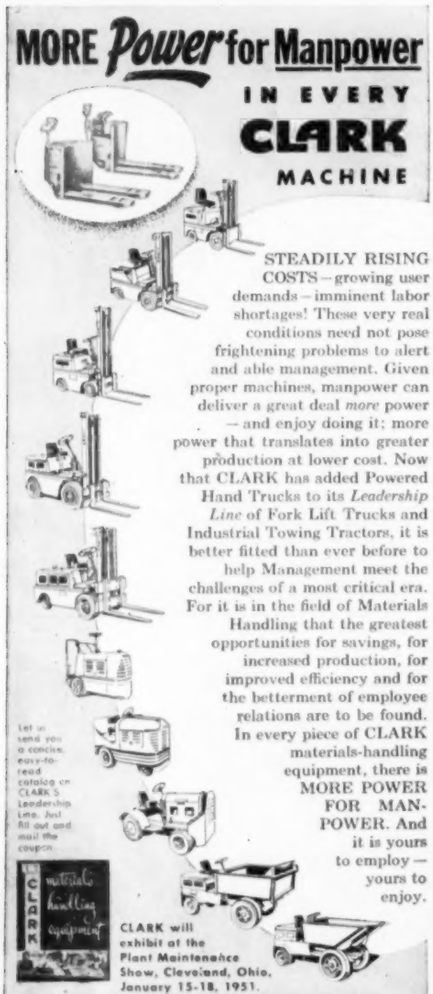
Present capacity: ¾-ounce size, 2 x 3 x 1"

*Your inquiries are invited.*

DAYTON ROGERS
*Manufacturing Company*
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 716 if you write the maker

MORE *Power* for Manpower IN EVERY CLARK MACHINE



STEADILY RISING COSTS—growing user demands—imminent labor shortages! These very real conditions need not pose frightening problems to alert and able management. Given proper machines, manpower can deliver a great deal *more* power—and enjoy doing it; more power that translates into greater production at lower cost. Now that CLARK has added Powered Hand Trucks to its *Leadership Line* of Fork Lift Trucks and Industrial Towing Tractors, it is better fitted than ever before to help Management meet the challenges of a most critical era. For it is in the field of Materials Handling that the greatest opportunities for savings, for increased production, for improved efficiency and for the betterment of employee relations are to be found. In every piece of CLARK materials-handling equipment, there is MORE POWER FOR MANPOWER. And it is yours to employ—yours to enjoy.

Let us send you a concise, easy-to-read catalog on CLARK'S Leadership Line. Just fill out and mail the coupon.

CLARK materials handling equipment

CLARK will exhibit at the Plant Maintenance Show, Cleveland, Ohio, January 15-18, 1951.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

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AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

# NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

**BEARINGS** . . "Guiderol" roller bearing, needle and cylindrical types; description of self-aligning roller design, dimensions and ratings. Bulletin GR-50, 12 pages. McGill Mfg. Co., 100 N. Lafayette St., Valparaiso, Ind. **IEN-01**

**BOILERS** . . "Powermaster" steam generators, 15 to 250 hp.; cut-away view and operating description to trace path of gases through the unit. Bulletin 1217, 8 pages. Orr & Sembower Inc., 860 Morgantown Rd., Reading, Pa. **IEN-02**

**BRONZE** . . Aluminum-bronze alloys for corrosion-resistant applications; description and chart on properties, examples of use. "Corrosion Resistance", 4 pages. Ampco Metal, Inc., 1743-47 S. 38th St., Milwaukee 15, Wis. **IEN-03**

**BUILDINGS** . . "Kaylo" laminated panels with asbestos-cement facing and insulating core; properties, installation detail drawings. Bulletin KB3R-505, 12 pages. Owens-Illinois Glass Co., 538 Ohio Bank Bldg., Toledo 1, Ohio. **IEN-04**

**BUILDINGS** . . Thin wood sheet on cotton-fabric backing; application pictures on walls to show grains and methods of treatment. Bulletin, "Flexwood", 12 pages. U. S. Plywood Corp., 55 W. 44th St., Rm. 500, New York 18, N. Y. **IEN-05**

**CASTERS** . . Pressed-steel units, swivel and rigid, assembled by welding; construction description, tables of specifications, wheel types. Bulletin 23-33, 4 pages. Fairbanks Co., 395 Lafayette St., New York 3, N. Y. **IEN-06**

**CENTRIFUGALS** . . Continuous screen and bowl types; cut-away drawings to show construction details, sizes, force diagram. Bulletin, "CME Centrifuge", 8 pages. Condenser Service & Eng. Co., River & Newark, Hoboken N. J. **IEN-07**

**CHEMICALS** . . Crotonic acid; physical properties, solubility table, notes on application in plastic resins, paints, others. "Crotonic Acid", 4 pages. Tennessee Eastman Corp., 10 E. 40th St., Rm. 4010, New York 16, N. Y. **IEN-08**

**CHUCKS** . . Power chucks in two and three-jaw models, 6 to 12 in.; operation, drawings, dimensions, also pneumatic cylinders, valves. Catalog, letterhead request, 44 pages. S-P Mfg. Corp., 12413-17 Euclid, Cleveland 6, Ohio. **IEN-09**

**CIRCUIT BREAKERS** . . Molded-case units, 10 to 600 amp.; construction points in detail, available models, corresponding ratings. Bulletin 5004-D, 12 pages. I-T-E Circuit Breaker Co., 1809 Hamilton St., Philadelphia 30, Pa. **IEN-010**

***All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90***

BREVITY—Identify by IEN - 718 if you write the maker

A News Advertisement by Kollmann Mfg. Co.

CLEANS DRAIN AND SUPPLY LINES

**. . . Advanced design machine features instant-acting clutch and sectional cables for fast, SAFE operation by one man. Cuts maintenance costs and "down" time.**

**Source: KOLLMANN MANUFACTURING CO. 4850 Peach St., Erie, Pa.**

This fully portable, electric power machine is ideal for clearing obstructions from underground or overhead drains and supply lines. Adaptable to 4 cable sizes and to all pipe sizes from 1¼" to 12". Handles up to 200' of cable at 700 R.P.M. **under instant control.**

Convenient 15' sections of tempered steel cable, couple and lock instantly and are enclosed by guide hose. There is no unwieldy cable length to damage operating area or injure operator.

Patented instant-acting clutch provides finger tip control for starting, stopping and reversing. Cutters and cables clear any combinations of traps, ells and bends in sewer or industrial drains, conductor lines, concealed or exposed downspouts and supply lines. Easily carried and operated by one man, machine can be passed through an opening 14 by 22 inches and needs only 3 sq. ft. of floor space. Quickly pays for itself through reduced maintenance costs and less out-of-service time. For full details and name of nearest distributor, write Kollmann Manufacturing Company, 4850 Peach St., Erie, Pa., or use the enclosed Reader Service Form.

BREVITY—Identify by IEN - 719 if you write the maker

## How You Save with the NEW Niagara Method of Air Conditioning

*Using "HYGROL" Absorbent Liquid*

Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power; get easier, more convenient operation.

Using "Hygrol" absorbent liquid gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process and food products—or in obtaining better results in comfort air conditioning at lower refrigeration costs.

Filtered air is dehumidified by passing through a spray of "Hygrol" which removes airborne moisture. This liquid is non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

*Food Packaging under Controlled Humidity*

Units provide a range of capacities from 1000 to 20,000 C. F. M. Multiple unit installations are in use successfully. Records of results are available. For further information, write Niagara Blower Co., Dept. **EN,** 405 Lexington Ave., New York 17, New York.

BREVITY—Identify by IEN - 720 if you write the maker

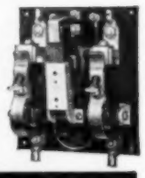
Zenith

**Performance . . .**

Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.

Zenith automatic controls

Cover the field; Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless Impulse Timers, Program Clocks—also special equipment for your special needs.



WRITE NOW FOR COMPLETE CATALOG!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 721 if you write the maker

For DEFENSE PROGRESS

. . . INCREASE your Personnel's VISUAL EFFICIENCY

Accidents lessen production and increase spoilage—and poor vision is one of the most important contributing causes of accidents.

**Now is the time to install a Keystone Occupational Visual Service.** A sampling test, run on a group of your own employees, will show that a Visual Testing program will give you the results that thousands of plants are reporting:

**LOWER production costs** and training costs; lower labor turnover; less spoilage; reduced accident and insurance rates. **INCREASED efficiency,** larger profits; increased employee satisfaction.

Write for circular: **KEYSTONE VIEW COMPANY,** Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

**KEYSTONE**
*Occupational Visual Service*

BREVITY—Identify by IEN - 722 If you write the maker

"HOLD EVERYTHING" with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2⅜" to 8⅝"
Positive non-slip grip

Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

BREVITY—Identify by IEN - 723 If you write the maker

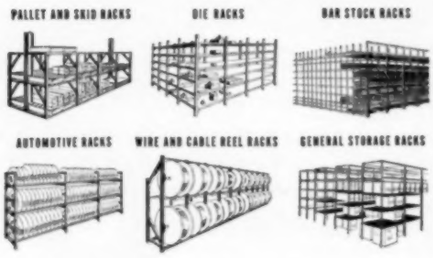
Now! build your own RACKS the quick UNISTRUT WAY and Save!

Let this NEW Free Catalog help you

Shows how you can build your own racks with Unistrut, right on the job. Write today for your copy of this new 24-page fully illustrated Catalog No. 600.

NO DRILLING, NO WELDING, 100% ADJUSTABLE AND REUSABLE!

No Special Skill Required!

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## NEW LITERATURE—Continued

*"Alphabetically to assist you in finding"*

**CLEANING** . . Blast cleaning equipment; examples of its use on metal parts prior to finish by vitreous enameling. Bulletin 694, 4 pages. American Wheelabrator & Equipment Corp., 14 S. Byrkit St., Mishawaka, Ind. **IEN-011**

**CLEANING** . . "Speedylectric" steam-jet cleaning machine; schematic on electric operation, specifications, illustrated uses. Bulletin 74-A, 4 pages. Livingstone Engineering Co., 102 Grove St., Worcester 5, Mass. **IEN-012**

**CLEANING** . . Automatic soot blower equipment for boiler cleaning in central stations; specific installation examples stressing the sequential feature. Bulletin 484, 24 pages. Vulcan Soot Blower Div., 50 Dock St., DuBois, Pa. **IEN-013**

**CONNECTORS** . . Pressure-crimped electric lugs and splice connectors; illustrated types, application, typical examples of use, tools. Bulletin 750, 4 pages. Buchanan Electrical Products Co., 1288-92 Central Ave., Hillside, N. J. **IEN-014**

**CONNECTORS** . . Miniature rack-and-panel units for electronic and instrument use; contact data, including diagrams and ratings. Leaflet DPM-2, 2 pages. Cannon Electric Development, 3207-11 Humboldt, Los Angeles 31, Calif. **IEN-015**

**CONNECTORS** . . "Tronex" hermetic terminals for electric and electronic products; properties and specifications on single and multiple assemblies. Catalog W-51, 16 pages. T. C. Wheaton Co., 43 N. Second St., Millville, N. J. **IEN-016**

**CONSTRUCTION** . . Concrete forms of wood or magnesium; standard units, hardware and accessories, assembly details, other products. "Wall Forms", 4 pages. Symons Clamp & Mfg. Co., 4247-51 Diversey, Chicago 39, Ill. **IEN-017**

**CONTROLS** . . "Duotrol" unit for water-supply pressure tank; operation sequence shown by drawings and description, selection. Bulletin 1500, 4 pages. Automatic Control Co., 1003-7 University Ave., St. Paul 4, Minn. **IEN-018**

**CONTROLS** . . Printed forms and racks for tool crib control; how-it-works description, other uses in addition to shop tools. Folder A-510 REV, 6 pages. McCaskey Register Co., 101 W. 31st St., Rm. 1605, New York 1, N. Y. **IEN-019**

**CONTROLS** . . Instruments and valves for power and process control; specifications and uses. "Power Industry Catalog", letterhead request, 88 pages. Minneapolis-Honeywell, Windrim & Wayne Aves., Philadelphia 44, Pa. **IEN-020**

**CONTROLS** . . Instruments to record and control temperature and pressure; schematic and description, data on pneumatic control head. Bulletin 750, 8 pages. Penn Industrial Instrument Co., 3152 N. 17th St., Philadelphia 32, Pa. **IEN-021**

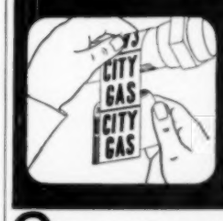
**CONTROLS** . . Unit to feed oil to a burner; details and schematics on how it compensates for temperature-viscosity changes. Bulletin F, 8 pages. Ray Oil Burner Co., 403-497 Bernal Ave., San Francisco 12, Calif. **IEN-022**

**CONVEYING** . . "Airslide" aerating-type conveyor for dry powders; description of operating principle, pictures to show application and parts involved. Bulletin F-H-1, 12 pages. Fuller Co., 1950 Fuller Bldg., Catasauqua, Pa. **IEN-023**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 725 If you write the maker

PIPE MARKERS




anyone can use— everyone can read

QUIK-LABEL Pipe Markers conform to American Standards Association Pipe Identification System. QUIK-LABELS come on handy cards . . . stick without moistening. Names of materials printed in large black letters on correct ASA background colors. CAN BE READ UP TO 75 FEET. Markers for over 140 materials, *including all materials listed in ASA Standard A13,* available on Brady Stock Cards. Specials made to your order. QUIK-LABEL Pipe Markers are Silicone Plastic coated to resist dirt, grease, fumes, moisture . . . indoors or out. Replace slow and costly painting and hand stenciling. Exclusive Starter-Strip automatically releases part of label for fast peeling. QUIK-LABELS mark your pipes so that anyone who can read will know what's in them. *QUIK-LABELS leave no room for doubt . . . or tragedy.* Write for useful literature and FREE SAMPLES today.

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Manufacturers of Self-Sticking Tape Products
CHIPPEWA FALLS 6, WISCONSIN
Established 1914
• Distributors in 125 Cities

BREVITY—Identify by IEN - 726 If you write the maker

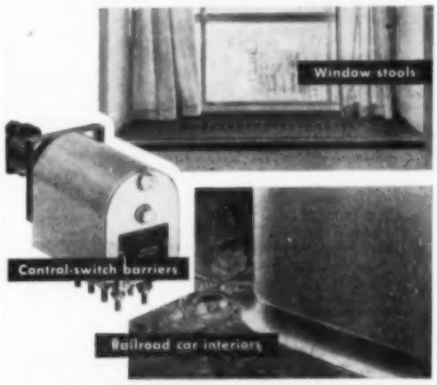
for faster and easier nut and bolt running

—on production lines, and in maintenance work—reversible CP AIR IMPACT WRENCHES speed operations, cut costs. There's no twisting thrust to fatigue operator. Complete line of seven wrenches—from ¼" to 1¼" bolt size—meets every requirement. All sizes are available with angle heads to reach awkwardly located nuts, bolts or studs.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 727 If you write the maker




FORM YOUR PLANS NOW WITH POSTFORMED PLASTIC LAMINATES

. . . Postformed plastic laminates made with BAKELITE Phenolic Resins—in both decorative and industrial types—are bringing economies and functional improvements to thousands of products and product parts. Industries they have helped include aircraft, automotive, textile, transportation, communications, and furniture.

Light in weight and inexpensive to fabricate, they are readily machined by standard methods. Depending on the types of laminates and their thicknesses, they can be formed to small radii. Once formed, these materials strongly resist denting. They have the mechanical strength to withstand vibration and rough handling. In electrical equipment, they provide electrical resistance. By combining mechanical and electrical functions, postformed laminates often eliminate costly assembly operations.

Shaped into single-unit counter tops and backs for kitchen cabinets and sinks, they overcome the problem of unsealed cracks that harbor dirt and moisture. Postformed corner panels in railroad cars promote safety and are easy to clean. There are hundreds upon hundreds of applications where postformed BAKELITE Phenolic plastic laminates have stepped up production and cut costs while upgrading products. Why not let us show how they can serve you? Write Dept. BM-14.

Illustrations courtesy of Formica Company.

WHAT ARE POSTFORMED LAMINATES?

Selected paper stocks, fabrics, or fibrous materials are impregnated with BAKELITE Phenolic Resin Varnishes. By means of heat and pressure they are converted into rigid, homogeneous, thermoset laminated sheets. These sheets have sufficient residual elasticity so that they can be *postformed* by reheating until they become pliable, after which they are drawn or bent over simple jigs and fixtures. Upon cooling they permanently harden into the new shapes.

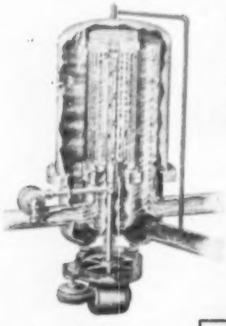
Bakelite TRADE-MARK Phenolic
LAMINATING VARNISHES
BAKELITE DIVISION UCC

BAKELITE DIVISION
*Union Carbide and Carbon Corporation*
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 729 if you write the maker

# Cut Your Water Bill

Make river or lake water fit for plant services . . . clean and recirculate used water—with Cuno FLO-KLEAN strainer.



**COMPLETELY AUTOMATIC**

Automatic backwash system—automatic blow-down.

**NO WATER WASTED**

Backwash water is returned to system.

**SELF-SUPPORTING**

Many FLO-KLEANS have paid for themselves in a matter of months.

**Free bulletin**

Address Cuno Engineering Corporation, 6912 South Vine St., Meriden, Conn.

CUNO

*Fluid Conditioning*

Removes More Sizes of Solids from More Types of Fluids

NO FLUID IS BETTER THAN ITS FILTRATION

BREVITY—Identify by IEN - 730 if you write the maker

# TAKE YOUR PICK

*from the most complete line of drop-forged wire rope and chain fittings*

Whether you want the famous Laughlin "Fist-Grip" Safety Clips — the Laughlin Safety Hook with the "latch that locks the load" — or any other wire rope or chain fitting, you can get what you want from Laughlin. Your Laughlin distributor will be glad to see that your order is promptly filled.

**SEND FOR FREE BOOK**

If you do not have a copy of the Laughlin Catalog No. 145, send for it now. Recognized as industry's data book, this 40-page catalog is packed with useful information that can be helpful to you. Write now for your free copy.

THE THOMAS LAUGHLIN COMPANY, Dept. 11, Portland 6, Maine

**LAUGHLIN**

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS

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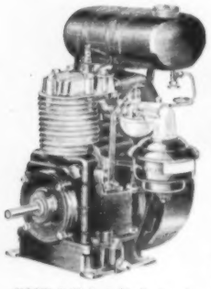

MODEL K-12-2, 3 H. P. 4-cycle single cylinder, air-cooled. Length 14" width 14" height 19" Wt. 41 lbs.

**RELIABLE POWER FOR:**

CONCRETE MIXERS
ROAD OILERS • COMPRESSORS
FLOOR SWEEPERS
GENERATORS • HOISTS
CENTRIFUGAL PUMPS
LIFT TRUCKS • PORTABLE SAWS
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# KOHLER ENGINES

**Four-Cycle Air-Cooled**

Kohler Engines are engineered and built to give the economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

**KOHLER OF KOHLER**

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

## NEW LITERATURE—Continued

*"Names and addresses so you can write direct"*

**CORROSION PROOFING** . . Vinyl-base material for roofs, walls, ships and packaging; data summary, examples of use in various fields. "Cocoon", 16 pages. Protective Coatings, Inc., 805-9 N. Fremont Ave., Tampa 6, Fla. **IEN-024**

**CORROSION PROOFING** . . "Ucilon" materials for metal, concrete, wood; types, physical properties, application, coverage. Folder MC-4, 4 pages, United Chromium Inc., 100 E. 42nd St., Room 1728, New York 17, N. Y. **IEN-025**

**CRANES** . . Mobile unit, 20 and 25 ton, highway speeds to 35 mph.; illustrated design features, application pictures in a number of industries. "CraneMobile", 24 pages. Bay City Shovels Inc., 2502 Center Ave., Bay City, Mich. **IEN-026**

**CRANES** . . Overhead electric traveling cranes, 1 to 100 ton; illustrated review on three available lines and on electric hoists to 15 ton. Bulletin S-151, 4 pages. Northern Engineering Works, 2603 Atwater St., Detroit 7, Mich. **IEN-027**

**DIE CASTINGS** . . Picture book of examples showing application of die castings to automatic transmissions in motor vehicles. Folder, 4 pages. Doehler-Jarvis Corp., 386 Fourth Ave., 19th Floor, New York 16, N. Y. **IEN-028**

**DRILLING** . . Light-duty drill presses, single to four spindles; condensed specifications on 12 models and examples of their use. "1600 Series", 4 pages. Boice-Crane Co., 926 W. Central Ave., Toledo 6, Ohio. **IEN-029**

**DRIVES** . . Universal joints for $\frac{1}{16}$ to 3-in. shafts; design features, static torque test curves, performance, sizes, specifications. Form C-1, 6 pages. Curtis Universal Joint Co., 2-6 Birnie Ave., Springfield 7, Mass. **IEN-030**

**DRIVES** . . Flexible couplings, universal joints, variable-speed sheaves and transmissions; sizes, ratings, specifications, list prices. Folder 1000, 4 pages. Lovejoy Flexible Coupling Co., 4999-03 W. Lake St., Chicago 44, Ill. **IEN-031**

**DRIVES** . . "Cone-Drive" double-enveloping speed reducers, .05 to 555 hp.; illustrated design features, power ratings. Bulletin 789-50, 4 pages. Michigan Tool Co., 7169-73 E. McNichols Road, Detroit 12, Mich. **IEN-032**

**DRIVES** . . Variable-speed transmission equipment; illustrated review to present capacity, control, application data on three types. Bulletin G-509, 12 pages. Reeves Pulley Co., 800 N. Wilson St., Columbus, Ind. **IEN-033**

**DRIVES** . . "Francke" flexible couplings, 1 to 13¼ in. bore; cut-away view and description, dimensions and ratings, selection suggestions. Catalog 50-A, 6 pages. John Waldron Corp., 50 River Road, New Brunswick, N. J. **IEN-034**

**DRIVES** . . Flexible shafts for power transmission and remote control; selection, torque tables, fittings, do's and dont's in use. Bulletin 5008, 12 pages. S. S. White Dental Mfg. Co., 10 E. 40th St., 23rd Floor, New York 16, N. Y. **IEN-035**

**DUCT** . . "Airtron" duct of glass fiber and plastic; selection chart by temperature range, engineering data on 130 units, typical uses. Catalog 503, 16 pages. Arrowhead Rubber Co., 11632-36 Patton Road, Downey, Calif. **IEN-036**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 732 if you write the maker

*A News Advertisement by* Honan-Crane Corp.

**OIL DISPENSING . . "One-man" mobile unit for handling oils and coolants**

**Source: HONAN-CRANE CORPORATION**
**subsidiary of HOUDAILLE-HERSHEY CORP.**
**802 Wabash Avenue, Lebanon, Indiana**

**Designated** the Houdaille Oil Dispensing Unit, new vacuum-pressure assembly offers clean, simple method of transferring oil from drums to machine tool reservoirs or sumps; transferring oil between drums; removing oils or coolants from tanks for dispensing to machine tool sumps. Unit adaptable to many other liquid handling problems.

**Fully** enclosed vacuum pump and ⅓ hp. motor, mounted on strong steel wheels equipped with roller bearings, are operated by a single manual switch. Three-way valve permits quick change-over from vacuum to pressure side of pump as needed. No liquid or abrasives pass through pump to cause wear or stoppage. An airtight lid for open-top drums, equipped with Mercoid liquid level control, prevents overflow and spillage. Pivoted platform is designed for easy loading and unloading of standard 55 gallon oil drums.

**One man** can easily operate unit at considerable savings in time and labor. Ideal for use where many individual sumps require servicing.

BREVITY—Identify by IEN - 733 if you write the maker

**Sets a new high standard for spray gun performance**

the new BINKS MODEL 18

You have to use this beautiful, well balanced production gun to believe its exceptional performance. Men who know fine finishing acclaim this new Binks masterpiece as the finest spray gun ever made.

**Ask your jobber**—or write us—for full data on this outstanding spray gun.

**Binks MANUFACTURING COMPANY**

3120-34 W. Carroll Avenue, Chicago 12, Illinois

BREVITY—Identify by IEN - 734 if you write the maker

How one Pittsburgh Brush*

# POLISHES 10,000 HEATING UNITS

** An actual case history from The Edwin L. Wiegand Company, producers of CHROMALOX Heating Units.*

WHEN this company needed a way to take the ragged edges off heating units economically and *fast*, they turned to sturdy, tough Pittsburgh Brushes for the answer. The 6" Pittsburgh steel wire brushes like that shown above polish 10,000 heating units during their life.

**LET PITTSBURGH ENGINEERS SOLVE YOUR BRUSH PROBLEMS**

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical, economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M-5, 3221 Frederick Ave., Baltimore 29, Md.

**PITTSBURGH**

*Power Driven* **BRUSHES**

BRUSHES • PAINT • GLASS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 736 If you write the maker

NEW Sky-Blast
POWER ROOF VENTILATOR

*positive, economical, easily installed*

Propellair's new Sky-Blast Ventilator creates a powerful suction and exhaust to blow out heat, moisture, dust or fumes. Features include famous cast aluminum airfoil propeller, automatic butterfly dampers that will not leak, gun-barrel throat. Low, symmetrical silhouette cuts down roof stresses. Easily mounted.

*Write for new Catalog I-680-N*

PROPELLAIR
DIVISION OF ROBBINS & MYERS, INC
SPRINGFIELD · OHIO

BREVITY—Identify by IEN - 737 If you write the maker

Kester Solder

Kester Flux-Core Solders are made only from newly mined grade A tin and virgin lead. Fluxes are chemically and scientifically correct.

Eliminates Rejects

Rejects are eliminated when the correct solder for the job is used. Kester makes over 100,000 different types and sizes of Flux-Core Solder.

Faster

Using Kester "Speed" Solders will increase the output of your assembly lines.

KESTER SOLDER COMPANY
4201 Wrightwood Avenue
Chicago 39, Ill.
Newark, N. J. Brantford, Can.

KESTER SOLDER

SEND FOR FREE MANUAL: "SOLDER AND SOLDERING TECHNIQUE"

BREVITY—Identify by IEN - 738 If you write the maker

The motor that keeps itself cool and clean...

This is one motor it pays to standardize on for all drives that call for a totally enclosed type, because it assures you of *top performance with rockbottom operating and maintenance costs* from every one you install.

SEND FOR THIS BULLETIN

It describes the exclusive features that make this motor run cooler and practically eliminate maintenance. Write today for Sealedpower Bulletin SL-300-2A. Address Elliott Co., Dept. N, Jeannette, Pa.

CW-20

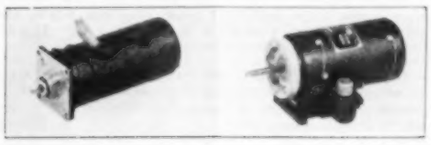
ELLIOTT COMPANY
General Offices & Main Plant Jeannette, Pa.

CROCKER-WHEELER DIVISION . . . AMPERE, N. J.
Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

BREVITY—Identify by IEN - 739 If you write the maker

## MOTORS . . DC. 26-volt units in ratings from 1/50 to 2 horsepower

**Source: LEAR INC.**
**108-12 Ionia Ave. N. W., Grand Rapids 2, Mich.**



**New line** of motors has been developed for use in aircraft and for industrial applications where a 26-volt dc. unit can be used. The line includes units starting at 1/50 hp. and increasing in constant-duty rating to ½ hp. with larger sizes to 2 hp. for intermittent duty.

**The 1/50-hp. design** shown to the left in the illustration operates at 15,000 rpm., has a duty cycle of 3 min. on and 17 min. off. It measures a little over 3½ in. in length. Weight is .82 pounds. The motor to the right rates 1/15 hp., operates at 4,600 rpm., has a continuous-duty cycle and measures about 5 in. in length.

**Optional design** includes the company's Fastop clutch, an electro-magnetic brake, thermal protector, flange or base mounting, radio noise filter. The motor construction is corrosion resistant and the ambient temperature range for satisfactory operation is between minus 65 and plus 165 deg. F.

BREVITY—Identify by IEN - 740 If you write the maker

## STEELS . . Color sound film on steel making from mine to finished product

Kaiser Steel Corp.
1922-26 Broadway, Oakland 12, Calif

**"Strength in the West"** titles new 16-mm. sound motion picture available on loan through the company's Public Relations Department. It traces production from mining of iron ore and coal through processing to rolling of the finished product. Showing time is 22 minutes.

BREVITY—Identify by IEN - 741 If you write the maker

## POLISHING . . Abrasive belt machine, centerless, work to 1½ in. diameter

**Source: PRODUCTION MACHINE CO.**
**410 Wells St., Greenfield, Mass.**

**Two stations** are assembled on this new machine for successive roughing and finishing in front of two 4-in. abrasive belts driven at 5,000 fpm. by a 3-hp. motor. At each station are feed and platen rolls for centerless action. The work rides between them in contact with the belts and is supported on fibre workrests. Adjustments are provided for work diameter to 1½ inch.

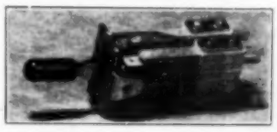
**The No. 481 marhine** takes straight pieces for through feed, and can handle tapered work on plunge-cut operation. The belts can be abrasive, felt, leather or fabric for a desired finish. Fibre, glass, metal, plastic, rubber, wood workpieces can be handled. Floor space is 33 by 40 inches.

**Bulletin 484,** 4 pages, presents illustrated description of the machine in single and duplex assembly, includes a dimensioned scale drawing of front and side elevations.

BREVITY—Identify by IEN - 742 If you write the maker

## SWITCH . . Lever-cam operated, multiple contact, leaf spring design

**Source: CIRCUIT CONTROLS CO.**
**Peoria & 32nd St., Steger, Ill.**



**Model 1** is a new design of multiple-contact switch for control, communicating, signaling, testing in which a multiple circuit is set for make and break in various combinations. Standard switch design employs ¼-in. silver contacts on tinned nickel-silver springs for rating to 3 amp. on 110-volt ac. Contacts to ¼ in. in diameter can be specified for rating to 10 amperes. Overall dimensions are about 1¼ in. to the front of the mounting plate and 2½ in. to the rear. Width is a little over 1 inch. Height depends on the number of specified contact springs in the pileup.

**Three positions** include neutral or center with locking or non-locking action on each side. There are also two positions without a center or neutral and one with a center and one side. The operating cam can be set between non-locking and locking action by changing a stop pin. Frame and cam are brass nickel plated. Cam roller axles and stop pins are made of stainless steel. Standard insulation rates to 1,000 volts breakdown between springs. Special insulation can be employed for a maximum of 2,500-volt dc. or 1,500-volt ac.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 743 If you write the maker

IT'S HERE!

79¢

The New Miracle Grinding Wheel Bond That Gives You 79¢ xtra Minutes Of Vital Production Efficiency Each Day!

CHICAGO WHEEL & MFG. CO. Dept. N
1101 West Monroe Street, Chicago 7, Illinois

BREVITY—Identify by IEN - 744 If you write the maker

Fans!
FOR ALL INDUSTRY
"Standard Units or Custom Design"

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special, custom designed equipment can also be furnished, and our staff of engineers are at your disposal for competent advice on any ventilating problem. Send for our catalog today!

Top: Heavy Duty "MOBILE AEROSPOT." Sizes, 24" to 36" Dia.
Middle: 6-Blade "DYNAFLOW" Also available in 2 and 4 Blade types. Sizes, 16" to 36".
Bottom: "DUCTYPE" Direct Driven Blower. Single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

BREVITY—Identify by IEN - 745 If you write the maker

CAST SPECIAL SHAPES QUICKLY . . . EASILY
. . . with these FIRECRETE
Castable Refractories

Special shapes or linings of Firecrete air-harden and are ready for service within 24 hours. Other advantages—no drying shrinkage, negligible firing shrinkage, high resistance to spalling, can be used in combination.

**3X Firecrete**—Effectively withstands soaking temperature to a full 3000 F. Provides savings through longer life and reduced shutdowns.

**H-T Firecrete**—A high heat-duty refractory made from an exceptionally heat-resistant base. For service between 2400 F. and 2800 F.

**Standard Firecrete**—The most generally applicable type of Firecrete—for use to 2400 F. Permits casting shapes or linings as thin as 1½".

**L-W Firecrete**—A lightweight insulating refractory concrete for use to 2400 F. Has low conductivity, low heat storage capacity and high resistance to spalling.

For patching and gunning, use 3X BLAZECRETE. Has exceptional adherence qualities, can be flipped into place with a trowel without ramming or tamping. For use to 3000 F. For further information, write to Johns-Manville, Box 290, New York 16, N. Y.

JM

Johns-Manville
FIRECRETE
"The Standard in Castables"

BREVITY—Identify by IEN - 746 if you write the maker

● FLEX—it's open! ● RELEASE—it's shut!
● No lever or button to push or squeeze.

As an air blow-gun or fluid nozzle, this Alemite Flex-Tip Valve is the handiest automatic hose attachment ever designed. Just flex the rubber tip with your thumb to open valve. Release your thumb and the valve shuts off tight. Available with ¼" and ½" female p.t. connection. **Write Alemite, Dept. K-11, 1850 Diversey Parkway, Chicago, Illinois.**

**ALEMITE**
*Industrial Lubrication Equipment*

BREVITY—Identify by IEN - 747 if you write the maker

**FREE SANITARY SURVEY!**

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

*Send for Booklet No. 12*

dependable **DOLGE**
WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 748 if you write the maker

NEW, IMPROVED **NU-MATIC**

**THE WHEEL WITH THE PNEUMATIC DRUM**

With this Nu-Matic wheel the abrasive belt rides on a cushion of air contained in a rubber drum. Different pressures in the drum and different grits provide varied surface finishes. Deflate, and belts can be changed easily and quickly for grinding, sanding or polishing. Cut your labor, production and inventory costs with Nu-Matic grinding units. Adapters for ⅛"-11 or ½"-13 power equipment. (Specify size.)

Adaptable to bench, portable or flexible shaft power.

**NU-MATIC GRINDERS, INC., 10304 W. McNICHOLS RD.**
Detroit 21, Michigan UNiversity 3-2573

## NEW LITERATURE—Continued

*"Condensed reviews for busy readers"*

**DUST COLLECTING** . . Impingement-type glass-fiber air filter for heating, ventilating, air conditioning; test performance curves, sizes. Bulletin, 4 pages. Glasfloss, 155 E. 44th St., Room 711, New York 17, N. Y. **IEN-037**

**DUST COLLECTING** . . Self-contained assemblies for machine application; construction features, capacities, notes on installation. Catalog 35, 24 pages. Torit Mfg. Co., 286 Walnut St., St. Paul 2, Minn. **IEN-038**

**ELEVATORS** . . For passenger use; details on typical parts, control methods, selection, layouts, maintenance. Bulletin B-4572, letterhead request, 52 pages. Westinghouse Electric Corp., 148-52 Pacific Ave., Jersey City 4, N. J. **IEN-039**

**ENGINES** . . Diesel engines, 90 to 220 hp.; page-by-page description of construction points, also generator sets, marine engines. Booklet, "10 Questions", 28 pages. Murphy Diesel Co., 5315-19 W. Burnham St., Milwaukee 14, Wis. **IEN-040**

**ENGINES** . . Small gasoline engines, about 1 to 2 hp.; specifications and performance curves on seven production models. Looseleaf catalog PP-W-10, 7 sheets. Power Products Corp., 49 Power St., Grafton, Wis. **IEN-041**

**EXTERMINATING** . . Insect-killing gas; instructions for use in passenger equipment such as railroad cars, buses. Bulletin, "Carboxide", 16 pages. Carbide & Carbon Chemicals Div., 30 E. 42nd St., Rm. 1213, New York 17, N. Y. **IEN-042**

**FABRICS** . . Coated with vinyl plastic; picture booklet in color on manufacture, properties, colors available, and four samples. "Story of Naugahyde", 24 pages. United States Rubber Co., 1230-32 Sixth Ave., New York 20, N. Y. **IEN-043**

**FASTENINGS** . . Screws in machine, wood, self-tapping designs; table of sizes and quantities on hand. "Holtite Bulk Stock List for December 1950", 8 pages. Continental Screw Co., 700 Mount Pleasant, New Bedford, Mass. **IEN-044**

**FASTENINGS** . . "Rollpin" hollow slotted drive pin; illustrated application steps, sizes and strengths, materials, examples of use. Bulletin 501, 4 pages. Elastic Stop Nut Corp., 2328-32 Vauxhall Road, Union, N. J. **IEN-045**

**FASTENINGS** . . "Multi-Unit" masonry anchors for machine bolts; types, list prices, instructions and tools for correct installation. Pocket Folder 157, 6 pages. U. S. Expansion Bolt Co., 600 State St., York, Pa. **IEN-046**

**FILTERING** . . Equipment for pressure filtering of liquids; models, cut-away views to show internal construction, filter media employed. Bulletin 691, 20 pages. R. P. Adams Co., 223-27 East Park Drive, Buffalo 17, N. Y. **IEN-047**

**GAGES** . . Water and liquid-level gages; sectional drawings, specifications, list prices, also illuminators, accessories. Catalog 50, 32 pages. Ernst Water Column & Gage Co., 248-52 S. Livingston Ave., Livingston, N. J. **IEN-048**

**GRINDING** . . Automatic rotary surface grinding machine; specifications, component details, notes on the type of work handled. Bulletin 245-2RM, 8 pages. Mattison Machine Works, 543-47 Blackhawk Park Ave., Rockford, Ill. **IEN-049**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60*

BREVITY—Identify by IEN - 749 if you write the maker

*A News Advertisement by* Robinson Ventilating Co.

**VENTILATING . . Centrifugal blower for exhaust service, 420 to 60,400 cfm.**

**Source: ROBINSON VENTILATING CO.**
**1948 Harmony St., Zellenople, Pa.**

**Type-AE** designates new single-inlet centrifugal exhaust blower fabricated from steel plate in welded assembly. The impeller is mounted on a cold-rolled steel shaft supported in self-aligning ball bearings. Drive can be arranged for direct or belt-connected motor on the box-type bearing base at the side of the blower housing.

Built in a wide range of sizes and can be made from heat resisting alloys for high temperature applications or acid resisting alloys for handling corrosive fumes.

Our engineering department will be glad to assist you in selecting the proper fan equipment.

Bulletin 5100, 20 pages, presents illustrated description and tabulated capacity and dimension data for each size in the line.

BREVITY—Identify by IEN - 750 if you write the maker

**LEKTROMESH**

**THE UNIQUE SOLID-METAL SCREEN**

*Distinguished for its*

★STABILITY in use
★UNIFORMITY of Hole Size
★WORKABILITY in Manufacturing Processes
★DIVERSITY of Applications to Research and Production

Electro-deposited in pure copper, pure nickel, or nickel-on-copper — in regular commercial production with counts from 25 to 400 per inch — in lengths up to 100 feet and widths up to 36 inches — with tolerances on hole size and thickness suitable for the most critical uses — LEKTROMESH is ideal for precise filtration, for fabricated products such as fuel filters and electronic shields, even for distinctive decorative screens with an integral pattern. For full details let us send our Bulletin on LEKTROMESH. Address Department 12.

THE C. O. **JELLIFF** MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS · FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 751 if you write the maker

**REDUCE MATERIAL AND PRODUCTION COSTS 2 WAYS!**

**ONE WAY**—Use inexpensive, easy-to-apply *Gripco Lock Nuts* to speed up production and keep bolted parts tight. They're easy to apply. Start on the bolt just like a common nut. When the "double triangle" threads contact the bolt threads, a wrench seats the nut and locks it securely.

*Gripco Lock Nuts* defy vibration; are unaffected by oil, water or chemicals. They can be removed with a wrench and reapplied many times without appreciable loss of holding power. Lock wherever they stop. Made to fit National fine or National coarse thread bolts. *Available in brass as well as steel.*

**ANOTHER WAY**—Use inexpensive *Gripco Pilot-Projection Weld Nuts.* Fast Application—raised Pilot centers nut over the hole instantly, accurately, for quick welding at exactly the right location. *Gripco Weld Nuts* are available with common threads or with Gripco Lock threads, and with two Pilot heights to fit different thicknesses of metal.

*Ask for samples or send a trial order.* Specify sizes and type of thread.

**GRIP NUT COMPANY**
310-S SO. MICHIGAN AVE., CHICAGO 4, ILL.

BREVITY—Identify by IEN - 752 if you write the maker

**GET THIS FREE BOOK OF FACTS ABOUT GLASS**

**Saves time in designing and specifying, suggests economical ways of using flat glass in place of other scarce, expensive materials.**

Complete specifications, including thicknesses, sizes, weights and physical characteristics of all types of flat glass are tabulated in this condensed, easy-to-read booklet. The information it contains is ideal for users, designers and buyers of glass for all types of industrial applications—sheet glass, polished plate glass, *Electrapane** (electrical conducting glass), *Thermopane** insulating glass, *Tuf-flex** tempered plate glass, safety glass and *Vitrolite** opaque colored glass.

*Write for your copy—ask for bulletin SPD—51*

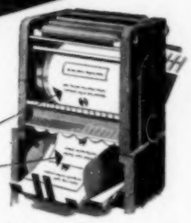
LOF GLASS
**LIBBEY·OWENS·FORD GLASS COMPANY**
8611 NICHOLAS BLDG.
TOLEDO 3, OHIO

▼ BREVITY—Identify by IEN - 753 If you write the maker ▼

it's paper

BUT YOU PRINT WITH IT

....NOT ON IT



Printing on paper with paper? Yes . . . today high-speed offset printing is often done with plates made of special Riegel paper instead of metal. They cost so little you use them once and throw them away. It is another example of the saving that can be made with a little imagination . . . and a special Riegel paper.

We now make over 600 grades, many with technical properties that would surprise you. Perhaps one of these Riegel papers can help you. If not, we can probably create a new paper . . . tailor-made to your most exacting requirements. Just tell us what you are looking for, or send us a sample.

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Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

▼ BREVITY—Identify by IEN - 754 If you write the maker ▼

*Let's get the facts*

STRAIGHT

*about oil fog...oil mist...oil-spray lubrication*

Widespread acceptance of the Norgren Oil fog lubrication principle for air-powered equipment has brought many imitators, naturally.

Pride in our past achievements leads us to present the following facts, so that more of industry interested in better lubrication will get the facts *straight*.

Norgren pioneered in the development of the *oil fog principle* of lubrication *more than twenty years ago*. Being first in the field, Norgren naturally had to perform all of the fundamental research and basic experimentation which was necessary. The subsequent years of development have given Norgren an immense amount of enviable knowledge and experience about *oil fog lubrication*.

On high speed spindle lubrication, Norgren also took the lead. *Fourteen years ago*, we introduced the first Norgren oil fog lubricator into this highly specialized field—and many contributing developments followed. At that time, spindle speeds of 15,000 r.p.m. were considered high. But with this Norgren aerosol lubricator sensational results in longer bearing life were produced. Thus, the Norgren spindle lubricator was directly and solely responsible for the development of present high spindle speeds of 100,000 r.p.m. and more. This Norgren *oil fog principle* is the most widely accepted method of high speed spindle lubrication today.

No—*oil fog* lubrication is *not new* today. It is almost as old as the Norgren organization itself. And in the twenty years since it was born in our engineering "lab," Norgren has always led the field in important developments of the *oil fog principle*. The latest evidence of this engineering leadership is our announcement of the *new and revolutionary Norgren Micro-Fog Lubricator*. Watch for it!

Norgren

222 SANTA FE DRIVE • DENVER 9, COLORADO

▼ BREVITY—Identify by IEN - 756 If you write the maker ▼

## TESTING . . Vibrating machine fatigue tests mechanisms to 14 pounds

**Source: CALIDYNE CO.**
**749-53 Main St., Winchester, Mass.**

**Shaker Model** 44 is a new electrically vibrated machine on which mechanisms are secured for fatigue testing. The machine will impose acceleration to 20g at ¼-in. excursion on a 14-lb. mechanism in a frequency range from 2 to 500 cycles per second. It will impose acceleration to 50g on mass loads to ¾ pound.

**The unit shown** measures about 18 in. in height with the table horizontal in the trunnion mounting. Base dimensions are 18½ by 14½ inches. The trunnion design permits moving the table to vertical position for action in this plane also.

**Complete equipment** calls for a Model 45-A control panel and a Model 45-B power supply. The latter includes an ac. motor direct connected to two dc. generators and a dc. motor coupled to high and low-frequency alternators. One of the alternators provides for a frequency range from 2 to 125 cycles. The other covers 100 to 500 cycles. Capacity is 1.5 kva. at any frequency over 60 cycles. Complete data are included in 4-page Bulletin 4401.

▼ BREVITY—Identify by IEN - 757 If you write the maker ▼

## DRIVE . . Overload release arm applies on shaft mounted speed reducer

**Source: AMERICAN PULLEY CO.**
**4244 Wissahickon Ave., Philadelphia 29, Pa.**

**Known as the Torque Arm Overload Release**

**New design** of the torque arm employed to anchor the company's shaft-mounted speed reducer, previously described IEN-8636-40, acts as a safety factor in the event of overload. A latch in the arm assembly releases the reducer housing to which it is secured to permit the housing to rotate with the drive. This frees the driven shaft and the reducer "floats" at zero torque.

**The arm** is repositioned when normal conditions have been restored and the drive can be resumed. The company can supply the new design on reducers ordered now. It also can adapt the unit for reducers now in service.

▼ BREVITY—Identify by IEN - 758 If you write the maker ▼

## GAGE . . Bourdon tube design with solid front, 30 in. to 80,000 lb.

**Source: CLAPP INSTRUMENT CO.**
**1948 Tracy Court, Webster, Mass.**

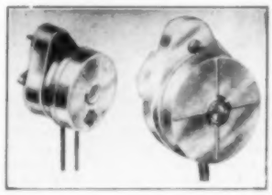
**Solid cast web** in the housing of this new Acragage backs up the dial. The back of the housing is open for access to the mechanism and is covered by a removable waterproof blowout disc bonded in a Buna-N seal. The disc relieves pressure in the housing on reaching ½ to 3 lb. depending on the size of the gage and the type of connection. The solid front restrains the pressure, prevents breaking the gage lens.

**Sizes** range from 4½ to 10 in. for surface and flush mounting. Various types of bourdon tube provide for units to read to 30 in. of vacuum or to 80,000 lb. of pressure. Standard movements are stainless steel or nylon and stainless.

▼ BREVITY—Identify by IEN - 759 If you write the maker ▼

## MOTOR . . Synchronous timing unit for speeds down to 1 rev. in 30 days

**Source: HAYDON MFG. CO.**
**243-47 E. Elm St., Torrington, Conn.**



**New motor** to the left in the illustration is known as Series 4400. It has been developed to replace the previous Series 4100 for very slow speed. Standard output speeds are 1 revolution in 6, 8, 12, 24, 168 hours. Special speed can be specified for quantity order in a range from 1 revolution in 5 hr. to 1 in 30 days. Overall depth of the assembly is 1⅝ inches.

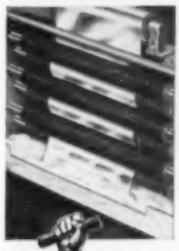
**Also available** in the company's line is hermetic sealing for the assembly as shown to the right in the illustration. This assembly is available on order for any of the units in the line. Enclosures are evacuated to 100 microns and are filled with one atmosphere of dry nitrogen.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

▼ BREVITY—Identify by IEN - 760 If you write the maker ▼

HOW PRODUCTION-WISE MANUFACTURERS

Reduce Brushing Costs



WITH FULLERGRIPT FOR:

**Scrubbing Strip Brass**
One brass mill reports that since installing Fullergript brushes, yearly replacement time has been cut from 450 to 30 hours. In addition, the extra-long life of Fullergript saves $1440. in brush costs alone.

**Spreading Talc on Coated Materials**
A manufacturer of raincoats improved quality by using Fullergript brushes to spread talc evenly . . . also saved valuable time formerly spent on dismantling machines for brush replacement. With Fullergript only the strips are replaced.

**WRITE** for FREE booklet, "Fullergript Power-Driven Brushes"

FULLERGRIPT The FULLER BRUSH CO. INDUSTRIAL DIV.

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$100 "DE-STA-CO" CLAMP INVESTMENT

saves over $5000 each shift per year

A saving of 12 man-hours per shift is reported by **Ross Operating Valve Company** with this fixture, built around 24 "De-Sta-Co" Model #620 Toggle Clamps.

Photos courtesy Ross Operating Valve Co. Detroit, Mich.

The fixture holds **Ross** 4-Way air operating valves during a "run-in" operation. The clamp plungers are tipped with rubber grommets which seal exhaust and intake ports during the "run-in," after which the valves are torn down and inspected carefully. Besides the actual saving in man-hours, these "De-Sta-Co" Toggle Clamps convert a tedious setup job into one quickly and accurately performed by less highly-skilled labor.

For your problem in production work-holding there's a "De-Sta-Co" Toggle Clamp that assures increased efficiency, accuracy and savings. Whether you're machining, welding, gluing, bonding, inspecting or assembling, you do it faster . . . and cheaper . . . with "De-Sta-Co" Toggle Clamps. Our catalog describes more than 40 fixture and portable models, holding capacities over 2500 lbs. Write for your copy today, and name of nearest "De-Sta-Co" distributor.

DETROIT STAMPING COMPANY
942 MIDLAND AVENUE
DETROIT 3, MICHIGAN

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HANSEN - *the Tacker* with 1001 Uses

BOAT seats and life-preserver units are put together in a fraction of time formerly required—with the Hansen Model T-2 Tacker—for Lee L. Woodard Sons Co., furniture manufacturers, Owosso, Mich.

Tacker is more efficient. Provides neater, longer-holding seat covers. Saves 6c. per seat cover over previous method.

In all types of industries, Hansen is proving itself a faster, neater, better way to fasten. Thirty-six models. 80 staple sizes. Submit sample or sketch, with your problem.

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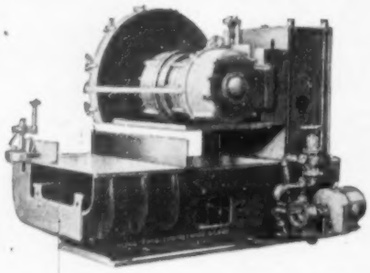
CUT WITH **KLING** HIGH SPEED FRICTION SAWS

WITHOUT CHANGE OF BLADE OR SET-UP
CUTS VARIED STRUCTURAL SHAPES—
SOLID BARS OR TUBING



**HERE'S THE RECORD;** Cuts 24" 100-lb. I Beam 28 seconds—15" 55 lb. Channel 15 seconds—8" x 8" x 34.3-lb. H Beam 6 seconds—100 lb. A.R.A. Rail 6 seconds—8" x 8" x ¾" Angle 11 seconds—4" Round Bar 15 seconds.

Consult Kling engineers regarding your metal cutting problems. State size of material to be cut. Bulletin No. 9200 giving full particulars and suggestions as to the type and size of saw will be mailed promptly. No obligation.

**KLING BROS.** Engineering Works
1326-1E No. Kostner Avenue
Chicago 51, Illinois

BREVITY—Identify by IEN - 764 If you write the maker

Now...make sharper cuts in production costs!

Three-piece frame and body construction for greater rigidity, accuracy, and smoother operation. Gives you more production per operator, more profitable operations, more years of service. Patented Feeding Mechanism prevents overloading blade, greatly prolongs blade life.

Put this new Walker-Turner 16" Metal Cutting Band Saw to work in your shop. Watch how it speeds cutting and cuts production costs. See your distributor, or mail coupon for catalog describing this and other machines in the complete Walker-Turner line of power tools for metal and woodworking operations.

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## NEW LITERATURE—Continued

*"Subject and content stated for each"*

**GRINDING** . . Abrasive wheels for toolroom grinding operations; recommended types, applications, list prices. Folder ESA-197, 4 pages. Simonds Abrasive Co., Fraley & Tacony Sts., Philadelphia 37, Pa. **IEN-050**

**HANDLING** . . Equipment to handle coal and ashes in power plants; installation drawings of bins, bunkers, conveyors as examples. Folder, "8 Reasons", 4 pages. Fairfield Engineering Co., 340-44 Chicago Ave., Marion, Ohio. **IEN-051**

**HANDLING** . . Wire-bound pallet boxes; picture examples of use in handling, storage, shipment of materials and finished products. Bulletin, "This Problem . .", 12 pages. General Box Co., 510 N. Dearborn St., Chicago 10, Ill. **IEN-052**

**HANDLING** . . Clamshell buckets, ⅝ to 3 cu. yd. for material handling and other uses; specification tables, construction. Bulletin H-850, 8 pages. George Haiss Mfg. Co., Canal Place & 143rd St., New York 51, N. Y. **IEN-053**

**HEAT TREATING** . . Controlled-atmosphere furnaces; condensed specifications on 5 types and two gas generators to use with the furnaces. Bulletin SC-148, 4 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio **IEN-054**

**HEAT TREATING** . . Hardening materials for steel parts; properties and uses of two types, curves and test data on treated parts. Bulletin 13, 2 pages. Wilson Carbon Co., 60 E. 42nd St., Room 659, New York 17, N. Y. **IEN-055**

**HEATING** . . Package assembly to make hot water by mixing steam and cold water; operating schematic, description, ratings. Bulletin SM-41, 4 pages. O'Brien Steam Specialty Co., 330 Heffernan Bldg., Syracuse 2, N. Y. **IEN-056**

**HEATING** . . Direct-fired unit heater, oil or gas; description on general features, selection data including outdoor design temperatures. "Thermobloc", 8 pages. Prat-Daniel Corp., 82-86 S. Water St., East Port Chester, Conn. **IEN-057**

**HOISTS** . . Portable units with pneumatic, electric, gasoline power; sectional illustrations and catalog data on units to 3,500 lb. Bulletin 76-X, 16 pages. Joy Mfg. Co., 48 Oliver Bldg., Pittsburgh 22, Pa. **IEN-058**

**HOISTS** . . Electric units, ½ to 15 ton, also hoist cranes; illustrated review on the company's line of models and uses. "Hi-Lift", 8 pages. Northern Engineering Works, 2003 Atwater St., Detroit 7, Mich. **IEN-059**

**INSULATING** . . "Marinite" asbestos-base rigid sheet for thermal insulation; technical data on properties, examples of use. Folder IN-133A, 4 pages. Johns-Manville, 22 E. 40th St., Room 1201, New York 16, N. Y. **IEN-060**

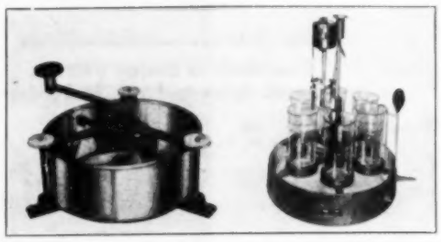
**INSULATING** . . Custom-molded 85 per cent magnesia pipe covering to 550 deg. F.; table of thickness standards for copper tube and iron pipe. Bulletin M, 4 pages. Mundet Cork Corp., 7103 Tonnelle Ave., North Bergen, N. J. **IEN-061**

**INSULATING** . . "Unibestos" pipe and block insulation, cements, flexible insulation, packings, textiles, condensed catalog data, uses. Bulletin 48-1023, 8 pages. Union Asbestos & Rubber Co., 1825-29A S. 54th Ave., Cicero 50, Ill. **IEN-062**

BREVITY—Identify by IEN - 766 If you write the maker

### TESTING . . Hand operated mixer and washer unit for foundry sands

**Source: CLAUD S. GORDON CO.**
**3002 S. Wallace St., Chicago 16, Ill.**



**Catalog 3620** is a new utility hand-operated mixer to prepare batches of foundry sand for testing purposes. The unit is fitted with a stainless-steel pan measuring 12 by 5½ inches. Rotating the handle causes a mixing head to rotate and the complete head to move around inside the pan so a scraper urges the material in toward the center. The head can be removed for cleaning. The pan is anchored by three clamps.

**Catalog 3615** is a new motor-driven six-unit sand washer mounting six beakers and a syphon around a central stand supporting a motor-driven impeller. It is designed to determine the clay content in foundry molding sand by removing the clay for comparison of weight "before" and "after". The impeller throws the sand grains against baffles suspended in the beakers containing sand and water. The syphon removes wash water from each beaker to an exact level.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 767 If you write the maker

For Savings Specify

DARNELL CORP. LTD. LONG BEACH 4, CALIFORNIA | 60 WALKER ST. NEW YORK 13, N.Y. 36 N. CLINTON, CHICAGO 6, ILL.

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for close check on surface temperatures

Alnor PYROCON

Wherever a close and frequent check on low surface temperatures must be maintained on machines and materials, you'll find the handy Portable Pyrocon a valuable instrument. It is unexcelled for fast, accurate temperature readings of any surface, flat or curved, stationary or revolving. It may be used with plastic materials, waxes, rubber, liquids, oil or grease, molten soft metals, etc. The rugged Pyrocon can bring laboratory accuracy to your temperature measurement—at low cost. Write today for details on wide selection of thermocouples and extension arms.
Illinois Testing Laboratories, Inc.,
Room 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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WHEN YOU NEED
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CALL RYERSON

Contact Ryerson for prompt shipment of dependable steel products. Because of great demand, all sizes are not always in stock; but you will find that we can usually take care of your requirements.

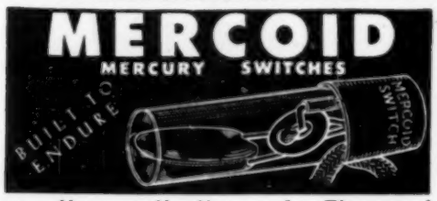
PRINCIPAL PRODUCTS
Bars • Structurals • Plates • Sheets • Tubing • Allegheny Stainless • Alloy Steel • Safety Floor Plate • Babbitt • Solder
Metal Working Tools & Machinery, etc.

JOSEPH T. RYERSON & SON, INC.

Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

BREVITY—Identify by IEN - 770 if you write the maker

# MERCOID
MERCURY SWITCHES




*Universally Known for Their Superior Quality and Workmanship*

They are not affected by dust, dirt or corrosion and have many definite applications where open contacts are not suitable. Various types available. MERCOID is your guarantee of the best in mercury switches. Further information sent upon request.

**LET MERCOID SOLVE YOUR CONTROL PROBLEMS**

They rank first for convenience of adjustment—dependable service and long life.

They are designed for various applications requiring the control of pressure, temperature, liquid level and mechanical operation.

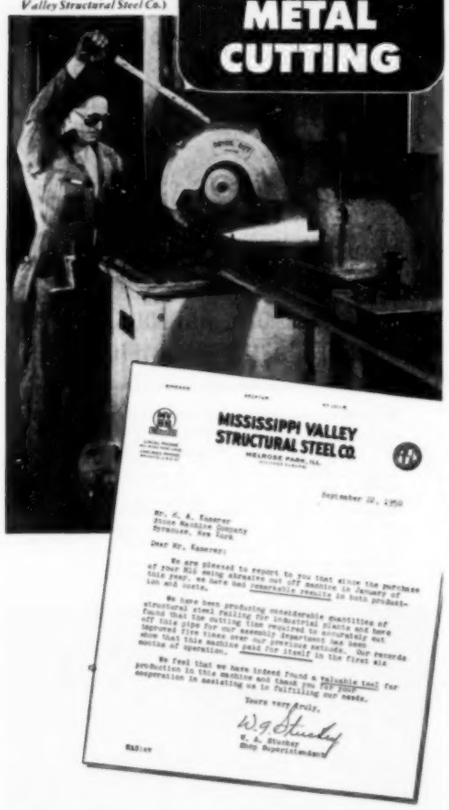
*Complete Mercoid Catalog sent upon request.*

**THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO 41, ILL.**

BREVITY—Identify by IEN - 771 if you write the maker

# LOW-COST METAL CUTTING

*(Photo Courtesy Mississippi Valley Structural Steel Co.)*




This progressive fabricator now has six Stone metal cut-off machines in operation.

The Stone Swing-Cut in your shop will cut metals at the rate of 4 seconds per square inch at a cost of approximately 1⅓ cents per square inch. You can lower your metal-cutting costs — in ferrous or non-ferrous materials — with a Stone Swing-Cut.

*Write today for further information.*

**STONE MACHINERY CO., INC.**
310 Fayette St. Manlius, New York

BREVITY—Identify by IEN - 773 if you write the maker

## TESTING . . Universal machine for tension, compression, transverse

**Source: TINIUS OLSEN TESTING MACHINE CO.**
**1104 Easton Road, Willow Grove, Pa.**

**Three test ranges** are included in this new Super-L assembly in the company's line of universal testing machines. The three include full capacity, ½ and 1/10 capacity. All are read on the one 28-in. dial by numbers printed in three colors with the range selected showing in illuminated relief above the others. Zero loads for all three ranges are the same so a test range can be changed without changing the loading rate. Overload protection is a part of the assembly. The machine is available in four maximum capacities between 60,000 and 300,000 pounds.

**Load application** is by a hydraulic piston and cylinder in the base together with a motor-driven pump, reservoir and controls. Test speed is adjustable in stepless progression to 2 ipm. The piston moves upward to apply tension, compression or transverse loading. A valve and stroke-limit switch prevent overloading and overtravel respectively.

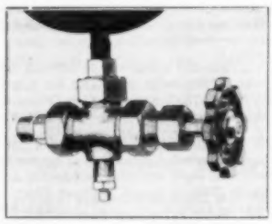
**The specimen** under test resists piston movement and so develops pressure in the cylinder to operate the indicating mechanism which is a separate electronic null unit calibrated, sealed and certified. The assembly includes an electronic stress pickup and transmitter, a receiver, an amplifier and servo motor all combined in a balanced circuit to receive signals from the pressure cylinder and translate them into motion at the load pointer.

**Bulletin 40,** 8 pages, presents illustrated description with information on associated electronic recording equipment. A line drawing shows assembly of the operating elements. A table presents specifications.

BREVITY—Identify by IEN - 774 if you write the maker

## VALVE . . With integral fittings for instrument piping applications

**Source: JERGUSON GAGE & VALVE CO.**
**80 Fellsway, Somerville 45, Mass.**



**Unions, nipples,** reducers, elbows, tees, drain and valve are combined into a single unit in this new line. Nine styles in the line include a safety shut-off, double - seating stem to repack under pressure, threaded design or lever operation for quick action, regrindable and renewable seats, pressure bleeder and test-gage connections, outside screw and yoke construction if required, throttling stem to specification. The valve is available with ¾-in. male inlet connection, ½-in. female top and bottom outlets. Seat diameter is standard at ⅜ inch.

**Bulletin,** Unit 148, 4 pages, presents drawings showing application to replace numerous fittings, includes illustrations and data on construction features, sectional views and a tabulation of standard and optional construction. Ratings and standard connections are listed with dimensions.

BREVITY—Identify by IEN - 775 if you write the maker

## DRILLING . . Single spindle machine, 3 hp., rates to 1¼ in. in steel

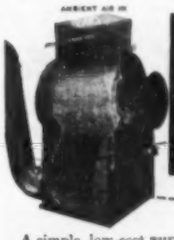
**Source: BARNES DRILL CO.**
**856 Chestnut St., Rockford, Ill.**

**No. 201¼** is a new production machine available in single and gang assembly to swing work to 20 in. in diameter. The drive is back-geared design for standard range in three steps from 95 to 236 rpm. with the back gears in and an additional three between 382 and 943 rpm. with the gears out. Geared feeds per revolution are between .004 and .031 inch. These feeds are selected by a single dial. A companion lever selects the speeds. Depth control trips out the feed in drilling or trips an electric reverse in tapping.

**The spindle** has 12 in. of travel from a maximum distance of 33½ in. from its nose to the table. The spindle is 1⅝ in. in diameter in its sleeve. The nose carries a No. 4 Morse taper. The table is adjustable vertically through 17 inches. It measures 15 by 24 in. over its working surface.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80*

BREVITY—Identify by IEN - 776 if you write the maker



# Multi-Purpose Thermostat

*Detects Humidity Level Accurately—Instantly*

FORCED HOT AIR TUMBLER-TYPE DRYER utilizes Fenwal THERMOSWITCH unit to signal when wash is ready for removal.

A simple, low-cost THERMOSWITCH unit solved problem of variations in wash load, humidity and outside temperature which baffled a cycle timer. Inserted in the moist air outlet duct of forced hot air tumbler-type dryer, it turns on pilot light when temperature of outgoing air, no longer cooled by evaporation in tumbler, rises close to temperature of heated incoming air.

THERMOSWITCH thermostats are unique. Their activating element is the single-metal shell that instantaneously expands or contracts with temperature change, making or breaking the enclosed electrical contacts.

**FENWAL INCORPORATED**
**74 Pleasant Street, Ashland, Mass.**
**111 S. Burlington Ave., Los Angeles 4, Cal.**
**TEMPERATURE CONTROL ENGINEERS**
**Write for Bulletin**

*Fenwal*

**THERMOSWITCH**
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE . . . *but only to heat*

BREVITY—Identify by IEN - 777 if you write the maker

# GOOD.....FOR ALL PRESSURES

Yarway Impulse Steam Traps are suitable for any pressure up to specified maximum *without change of valve or seat.* Types available up to 1500 lbs. Simplifies installation and maintenance. Over 650,000 Yarway Traps already *proved on the job.* Sold by over 200 distributors. Bulletin T—1740 free.

**YARNALL-WARING CO.** 122 MERMAID AVENUE, PHILA. 18, PA.

BREVITY—Identify by IEN - 778 if you write the maker

**The Answer is often:**

# USE SHAF-TITE* ROLLS

**Many Patented Constructions**

*Choice of*

**METAL, RUBBER, or WOOD ROLLS**

**Send For NEW ROLL CATALOG No. 48**

INDUSTRIAL ROLL DIVISION
**RODNEY HUNT MACHINE CO.**
873 Main Street Orange, Mass., U.S.A.
*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 779 if you write the maker

# Bendix-Friez

PRESENTS THE

## Illuminometer

INDUSTRY'S NEW TOOL FOR MEASURING DAYLIGHT ILLUMINATION

The Bendix-Friez Illuminometer is ideal as an aid to correct light-load prognostication through correlation with weather data and other known system factors. Based on U.S. Weather Bureau designs, this new instrument provides continuous recordings of daylight intensity in hundreds of foot-candles. An internal filter neutralizes heat ray effects and means are provided within the unit for calibrating the sensing element against U. S. Government standards. The Illuminometer is built and backed by Bendix-Friez, world's largest manufacturer of fine weather instruments.

Write: FRIEZ INSTRUMENT DIVISION of
1352 Taylor Avenue • Baltimore, Maryland
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

BREVITY—Identify by IEN - 780 if you write the maker

## SPRAY NOZZLES and ACCESSORIES

Delavan now offers a complete line of spray nozzles and accessories to meet every spraying requirement. The name Delavan is your assurance of top quality and outstanding performance.

WRITE FOR CATALOG NO. 30

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

BREVITY—Identify by IEN - 781 if you write the maker

LESS THAN A DIME PER KEYWAY

WHEN YOU DO IT THIS WAY WITH THE Minute Man KEYWAY BROACH

costing only $8.25 per broach and bushing —good for cutting 100 or more keyways in gears, cutters, hubs, collars, couplings, etc.

IN ONE MINUTE PER KEYWAY

MAIL THE COUPON

The duMONT CORPORATION
Greenfield, Mass.

Please mail Info Folder and Price List "N", on Minute Man Kits for cutting keyways from 1/16" to 1" wide in bores from 1/4" to 3" by 1/16" steps.

Name .....
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## NEW LITERATURE—Continued

*"Note the special 'O' numbers"*

**LIGHTING** . . Fluorescent fixtures for general service; specifications, illumination test data, illustrated mounting methods. Bulletin AL-A 2-4, 6 pages. Metalcraft Products Co., 304-310 Cherry St., Philadelphia 6, Pa. **IEN-063**

**LIGHTING** . . "Red Capper" lamp-holding outdoor floodlight equipment; design details, typical assemblies, components. Bulletin F-700, 4 pages. S & M Lamp Co., P. O. Box 2315-A, Terminal Annex, Los Angeles 54, Calif. **IEN-064**

**LUBRICATING** . . Sight window for press-in application on equipment; picture examples as oil level indicator, cover; sizes, mounting. Bulletin 4-D, 4 pages. Bijur Lubricating Corp., 149-53 W. Passaic St., Rochelle Park, N. J. **IEN-065**

**LUBRICATING** . . Oil caps in lid and slit-ball designs, also oil tubes, vents; dimensional drawings and tables, notes on adaptations. Bulletin, "Oilers", 10 sheets. Eynon-Dakin Co., 1845-49 W. Bethune Ave., Detroit 7, Mich. **IEN-066**

**LUBRICATING** . . "Spray Valve" unit to spray oil or grease on open gears, sliding surfaces; color-coded operating sequence drawings, description. Bulletin 60, 4 pages. Farval Corp., 3249-53 E. 80th St., Cleveland 4, Ohio. **IEN-067**

**METAL TREATING** . . Contract service to harden stainless-steel parts that are finished to size; general description, examples of work handled. Methods Booklet, 24 pages. C. U. Scott & Son, 1508-12 First Ave., Rock Island, Ill. **IEN-068**

**METALS** . . Design-strengthened sheet; review of properties, patterns, applications, with emphasis on performance for a given unit weight. Folder WF-1, 4 pages. Rigidized Metals Corp., 656-60 Ohio St., Buffalo 3, N. Y. **IEN-069**

**METERS** . . Panel-mounting electrical instruments, 1 to 4½ in.; illustrated types, dimensional drawings, ratings, list prices. Bulletin API-7, 4 pages. Assembly Products Inc., Bell & Main Sts., Chagrin Falls, Ohio. **IEN-070**

**METERS** . . Pocket-size volt-ammeter that clips over conductors to read; specifications, scale ranges, illustrated suggestions on use. Pocket Manual 110, 16 pages. Pyramid Instrument Co., 47-51 Howard St., New York 13, N. Y. **IEN-071**

**MONORAIL** . . "Trambeam" track, carriers, cranes and accessories; construction highlights, illustrated uses under a variety of conditions. Bulletin M-20, 20 pages. Whiting Corp., 15629 S. Lathrop Ave., Harvey, Ill. **IEN-072**

**MOTOR CONTROL** . . Type-256 air-break contactors for motors to 5,000 volts; description with emphasis on operation, performance. Bulletin 14-B-7303, 8 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-073**

**MOTOR CONTROL** . . Condensed summaries on reversing controllers, pressure switches, limit switches, magnetic and special controllers. Bulletin 5001, 4 pages. Furnas Electric Co., 1008 McKee St., Batavia, Ill. **IEN-074**

**MOTORS** . . Form W-600 Crocker-Wheeler dc. mill motors; cut-away view and accompanying construction description on rotor and stator. Bulletin SL-620-1A, 4 pages. Elliott Co., 49 Kealey St., Jeannette, Pa. **IEN-075**

BREVITY—Identify by IEN - 782 if you write the maker

## COOLING . . Heat transfer unit for service with electronic equipment

**Source: EASTERN INDUSTRIES INC.**
**294-98 Elm St., New Haven 6, Conn.**

**Model 20X** is a new unit in the company's line of heat-transfer equipment to collect and dissipate the heat generated in operation of electronic equipment. It applies with radio, television, radar, induction and dielectric generators, laboratory testing apparatus. Maximum rating is 15,000 watts. The assembly is in a steel housing that measures 26 by 36 by 52 inches.

**The assembly** includes a 3-stage centrifugal pump rating 5 gpm. at 50 lb., a brass expansion tank, thermostat, pressure switch and fittings to set up a closed circuit for water flow through the passages of the equipment to be cooled and then through the unit's six-bank reverse-flow radiator. A centrifugal blower drives air at 1,400 cfm. through the passages of the radiator to remove heat collected by the water and permit its return through its closed circuit to gather more heat. A ¼-hp. motor drives the blower. A ¾-hp. motor is connected to the pump.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 783 if you write the maker

ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

Write for Circular

Safety BELT-LACER CO.
5394 N. Menard Ave.
Chicago 30, U. S. A.

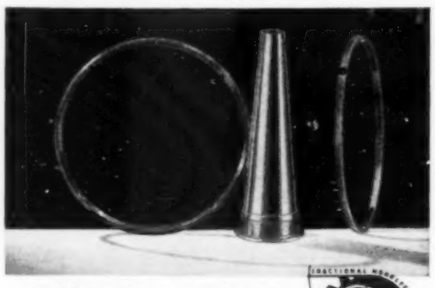
BREVITY—Identify by IEN - 784 if you write the maker

Sunbeam COFFEEMASTER

PARTS BY G.S. ARE CUT TO THE MOST EXACTING SPECIFICATIONS

● SUNBEAM Corporation has long been known for the *extra* years of dependable service their quality products give. Contributing substantially to the outstanding performance and long life of the *SUNBEAM Coffeemaster*, are parts cut by G.S. with traditional precision and *uniformity!* These unusual copper and stainless steel parts were processed on G.S. thread grinding and thread milling equipment.

More and more manufacturers from coast-to-coast have learned from experience that G.S. can also be depended upon for speed and accuracy in economically supplying *production runs* of Fractional Horsepower Gearing! You too, can benefit from our 30 years of specialization in making Small Gears. Ask our skilled engineers for suggestions, ideas and cost estimates. Write today.



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WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

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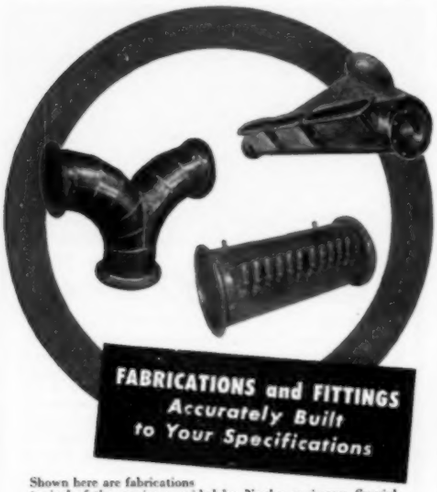


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NAYLOR PIPE COMPANY
1235 East 92nd Street, Chicago 19, Illinois
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Complete Facilities for
PRECISION GRINDING
FAST SERVICE . . . LOW COST

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- CRUSH FORM
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Acme is equipped to handle all types of precision grinding. Expert craftsmen, using newest methods and modern equipment, will do the job for you faster, better, more economically. Acme also offers a flat lapping service that can finish surfaces to within millionths. Write for details.

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Makers of Standardized Jig & Fixture Bushings
215 N. Laflin Street • Chicago 7, Illinois
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

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SHAKEPROOF
thread-cutting screws

ACTUALLY CUT THEIR OWN THREADS IN DIE-CAST MATERIALS!

Because their exclusive off-center, wide slot presents an acute serrated cutting edge to the work, Shakeproof Type 23 Screws are ideally suited for use in die-castings and in metals which tend to powder when driven. With exceptional free-cutting action, they produce a standard machine screw thread and completely eliminate separate tapping operations.

send for FREE sample kit No. 10

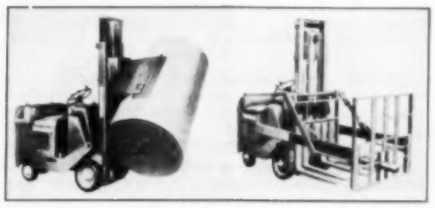
Try these screws! Prove to yourself their time and money saving advantages. Write today!

SHAKEPROOF inc.
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Ave., Chicago 39, Ill.

BREVITY—Identify by IEN - 789 if you write the maker

## TRUCKS . . Roll clamp attachment and coiled wire unloader for fork truck

**Source:** TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



**Two new attachments** have been added to the company's line of truck-mounted handling equipment. One, a revolving roll clamp, is designed primarily to handle newsprint rolls and similar loads into and out of freight cars and storage spaces. The other assembles on a fork-lift truck in connection with a coil-carrying ram in addition to the forks. It is power-actuated to strip a load by moving a pusher screen forward parallel with the ram.

**The roll clamp** mounts a stationary arm and one that is operated by hydraulic pressure to move into a closed position measuring 29 in. in diameter. It will handle rolls measuring 30 to 44 in. in diameter with weight to 2,800 pounds. A similar unit, also available, will handle rolls from 22 to 36 in. in diameter. Application is on the company's Model LT-48 fork-lift truck.

**The unloader** is designed for loads to 2,000 lb. on 18-in. load centers when equipped with 36-in. forks. It is 1,400 lb. with a 60-in. ram on 30-in. load center. The ram stands 12 in. above the floor in lowered position. Unloader stroke measures 49 inches. Extended position is illustrated.

BREVITY—Identify by IEN - 790 if you write the maker

## DIRECTORY . . FBI Register lists British manufacturers of industrial products

Iliffe & Sons Ltd., Books Department
Dorset House, Stamford St., London, S. E. 1, England

**Twenty-Third Edition** of "F. B. I. Register of British Manufacturers" is an 852-page book published for the Federation of British Industries. List price is 42 shillings, about $6. It is intended to promote British export trade.

**Seven sections** include one on products and services with classified listing of some 6,000 member firms under 5,000 alphabetical trade headings. Another large section is an alphabetical directory of member firms with products and overseas branches named. Other sections cover advertisements, trade names, trade associations, trade marks. Instructions on major sections and references are in English, French, Spanish.

BREVITY—Identify by IEN - 791 if you write the maker

## DRIVE . . Electric remote control adjusts output on variable speed unit

**Source:** STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.

**Speed-Trol** variable speed drives in service as well as new assemblies can be equipped with the company's new remote-control reversing-motor adjuster for the output speed. The equipment includes the small reversing motor with chain, sprockets, friction clutch, guard, a "fast-slow" pushbutton station and, if desired, a speed indicator. Application is made at the manual-control adjusting head on the Speed-Trol assembly.

**The drive** is available in ½ to 25-hp. ratings with three ranges of 2, 3 and 4 to 1 for output speeds from 2,000 down to 26 rpm. The adjustment is positive and stepless.

BREVITY—Identify by IEN - 792 if you write the maker

## PIPE FITTING . . Tank car coupling connects unloading hose or pipe to car

**Source:** ATLANTIC METAL HOSE CO.
123 W. 64th St., 11th Floor, New York 23, N. Y.

**Light weight** combined with ability to handle oils and chemicals characterizes the company's new tank-car coupling. It is made in 2 to 4-in. sizes, the largest weighing 4¾ lb. as compared to the 15 lb. in the malleable-iron coupling which the new unit is designed to replace. Each size carries a union tank thread 5¼ in. in diameter with 4 threads per inch. The outlet end is threaded for standard pipe connection or can be soldered direct to a length of the company's flexible metal hose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 793 if you write the maker

M&M air fluff paper shredder

The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

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You'll be interested in this test if you want
durable, low-cost intermediates of your drawings

In a "permanence test" made by the Virginia Department of Highways, this Kodagraph Autopositive Paper intermediate was left unprotected on a roof top for 36 days—exposed to 200 hours of direct sunlight . . . and 6.88 inches of rain. *After all this abuse* the print was "good as new."

**Proof, indeed,** that "Autopositives" will stand up under less trying, normal conditions . . . will remain intact in the files . . . ready to produce blueprints or direct-process prints whenever needed.

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*A new free booklet* gives full details on revolutionary Kodagraph Autopositive Paper, which you, or your local blueprinter, can process economically. Write today for a free copy.

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BREVITY—Identify by IEN - 796 if you write the maker

MODERN
INDUSTRIAL COUNTERS

Rugged as an Army tank. Work smooth as a watch.
Precision built—for tremendous wear life. Tamper-proof Reset.
Modern design—streamlined appearance—you can see the quality.
Used by the thousands in Auto and Aircraft Factories, Metal Working, Die Casting, Plastic Molding and Stamping Plants.
See a Silver King and compare. Order sample on approval today.

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describing
Stroke and Revolution Counters
Coil Winding Counters
Electric Counters
Electric Batch Counters
Actuating Switches

Production Instrument Company
700-10 W. JACKSON BLVD., CHICAGO 6, ILL.
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BREVITY—Identify by IEN - 797 if you write the maker

GET BETTER PRODUCTION HEATING

with WATLOW HOT PLATES

For many heating and pre-heating operations requiring wide range of accurately controlled temperatures . . . Surface plate is highly polished steel—no plating to flake off. Leveling feet. Rectangular shapes in almost any size to order. Controls for temperatures up to 550° F, 3—heat snap switches for 550° to 580°.

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SPECIALISTS IN ELECTRIC HEATING UNITS
WATLOW
ELECTRIC MANUFACTURING COMPANY
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BREVITY—Identify by IEN - 798 if you write the maker

STOP

Are Your ELECTRICAL CONNECTORS Jerk Resistant?

Jerked disconnects cause many apparently excellent connectors to open or short-out quickly.

Not MINES Portable Plugs, however . . . they're designed for rough treatment! Integrally molded of Neoprene rubber and joined to their cables by tapered-neck vulcanization, they outwear and outperform molded phenolic, plastic or porcelain types. In addition, MINES Connectors can't crack or shatter, and are impervious to the ill effects of moisture, oil, acids and dust.

Write for DESCRIPTIVE BULLETIN TODAY
It will pay you to investigate the complete MINES Connector line before placing your next electrical connector order.

SEE OUR CATALOG IN THOMAS' REGISTER

ME—349.1

MINES EQUIPMENT — MINES Division
JOY MANUFACTURING COMPANY
HENRY W. OLIVER BLDG., PITTSBURGH 22, PENNA.

## NEW LITERATURE—Continued

*"Is your company's new literature included?"*

**MOTORS** . . Authorized repair shops for the company's motors, variable-speed drives, controls; names, addresses. Folder A-2505, 4 pages. Reliance Electric & Engineering Co., 1111 Ivanhoe Rd., Cleveland 10, Ohio. **IEN-076**

**MOTORS** . . Details on "Lubriflush" design of grease-packed ball bearings in the company's line of electric motors. Folder 1579, 4 pages. U. S. Electrical Motors, Inc., 202 E. Slauson Ave., Los Angeles 54, Calif. **IEN-077**

**PACKAGING** . . Wrapping machines for automatic product packaging; illustrated examples of use from razor blades and candy to coffee and beans. Folder 127, 4 pages. Package Machinery Co., 132 Birnie Ave., Springfield, Mass. **IEN-078**

**PAINTING** . . Material with stainless-steel pigment in form of tiny flakes; specifications, performance test data, applications. Bulletin, "Liquid Stainless Steel", 4 pages. Slip-On Inc., 401 Broadway, Room 2113, New York 13, N. Y. **IEN-079**

**PARTITIONS** . . Made of woven wire, also guards, enclosures, gates to employ with the partitions; drawings, details. Bulletin, "Partitions", 8 pages. Standard Wire & Iron Works Co., 2424-28 N. Hancock St., Philadelphia 33, Pa. **IEN-080**

**PIPE** . . Made of plastic in sizes to 6 in.; data on rigid, semi-rigid, flexible types, strength tables, dimensions on six varieties. "Plastic Pipe", 4 pages. Carlon Products Corp., 10231 Meech Ave., Cleveland 5, Ohio. **IEN-081**

**PIPE** . . "Lockseam Spiralweld" light-weight pipe for air, water, oil, other uses; properties chart including collapse pressure, fittings, sizes. Bulletin 507, 4 pages. Naylor Pipe Co., 1228-32 E. 92nd St., Chicago 19, Ill. **IEN-082**

**PIPE FITTINGS** . . Type-PIC steel union for 150-lb. service; details on octagonal pipe ends, swedged bronze insert for the seat. Mailing folder P-100, 4 pages. E. M. Dart Mfg. Co., 132-36 Thurbers Ave., Providence 5, R. I. **IEN-083**

**PIPE FITTINGS** . . Type-S rotary pipe joints; sectional drawings to show packless construction points, sizes, dimensions, picture examples of use. Bulletin JS-2, 8 pages. Johnson Corp., 805 Wood St., Three Rivers, Mich. **IEN-084**

**PLASTICS** . . Laminated rod, sheet, tubes; general description, also fabricated parts, bearings, molded and molded-laminated parts. "Insurok", 4 pages. Richardson Co., 2760-64 Lake St., Melrose Park, Ill. **IEN-085**

**PLATING** . . Dipping baskets for plating and metal finishing; standard sizes in wire, perforated metal, earthenware; selection chart. Folder 6792, 4 pages. Hanson-Van Winkle-Munning Co., 100 Filbag St., Matawan, N. J. **IEN-086**

**PRESS ATTACHMENTS** . . Pneumatic-operated feed for strip stock to a press; data on four models including capacity. Bulletin, "Feedmaster", 6 pages. Great Western Tools, Inc., 3809-12 Riverside Drive, Burbank 26, Calif. **IEN-087**

**PRESSES** . . Compacting units, 75 and 200 ton, for plastics, ceramics, powder metal parts; review of features, specifications. Bulletin 323, 4 pages. Baldwin-Lima-Hamilton Corp., Paschall Post Office, Philadelphia 42, Pa. **IEN-088**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 799 if you write the maker

SEE NO EVIL

It is evil to gloat upon man's errors. But only a monkey blinds his eyes to the evils man suffers. We must open our eyes to the facts of cancer in order to defend ourselves against this dreaded scourge. For humanity's sake—and our own preservation—we must support the crusade against this mortal enemy of man.

GIVE TO CONQUER CANCER

AMERICAN CANCER SOCIETY

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COBURN FIRE DOOR HARDWARE

Metal clad or Kalamine doors, installed with Coburn Fire Door Hardware, reduce fire hazards, and lower insurance rates.

Coburn Fire Door Hardware is made to specifications of The National Board of Fire Underwriters and, where necessary, bear the U. L. I. label. Special sets available for single and double incline or level slide doors; single and double swing doors; vertically operated doors. All equipped with automatic self-closing devices. Write for catalog #210 showing full line of hardware, charts showing required headroom; wall space and other information.

Engineering help available without obligation.

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A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
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For more than 3 decades Aetna has specialized in solving the sort of bearing problems that "couldn't be solved." As a result, manufacturers have realized startling economies or licked tough merchandising problems that stymied sales.

Tell us about YOUR "tough" bearing problems. Nine times out of ten our engineers will be ready with the best answers—at the best prices—for our vast pool of tools and dies, acquired in making more than 2000 "specials" for industry, usually enables us to meet unique requirements without the expense of new tooling.

*Typical "Special" by Aetna . . . a combination roller and ball bearing which divorces applied loads into pure thrust and pure radial. Application: Oil Drilling Crown and Traveling Block.*

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BREVITY—Identify by IEN - 802 if you write the maker

Efficient Materials-Handling at the "Grass Roots" level with

Colson CASTERS

Model 4-807-65 Swivel fork caster—ideal for medium weight industrial equipment

● No matter how modern or streamlined your truck fleet, it's no better than the wheels and casters it rolls on. Surprising—how a few dollars spent for Colson casters can increase the efficiency of hundreds or thousands of dollars worth of rolling stock. There's a Colson for every need—from light casters for office furniture to heavy-duty jobs of 1500 pounds capacity.

Colson also manufactures a wide range of trucks—hand trucks, platform trucks, box trucks, drum and barrel trucks and Lift-Jack Systems. Write us or consult your phone book (under "Casters" or "Trucks—Industrial") for the Colson representative near you.

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ELYRIA, OHIO
CASTERS • LIFT JACK SYSTEMS • INDUSTRIAL TRUCKS

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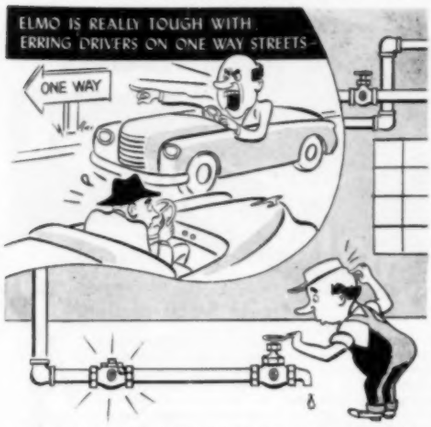


BUT HE FORGOT THAT CHECK VALVES ARE ONE WAY TOO TURN THAT O-B NO. 1 SWING CHECK VALVE AROUND AND YOU WILL GET SOME WATER OUT OF THE TAP.

OHIO BRASS COMPANY MANSFIELD 8, OHIO

Ohio Brass VALVES

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MAKE IT EASY

TO SEE

Mark your products in a conspicuous place . . . clearly, legibly, uniformly.

TO READ

Deep characters, carefully engraved, assure maximum legibility with a minimum of effort.

TO MARK

Use Matthews "Safe-Hed" Steel Stamps, with heavy supporting bevels, correctly contoured heads and easy-to-grip features.

SEND TODAY FOR BULLETIN 104-A

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New York • Chicago • Boston • Philadelphia
Syracuse • Newark • Los Angeles • Dallas
Cincinnati • Cleveland • Birmingham • Gary

BREVITY—Identify by IEN - 806 if you write the maker

## SHAPING . . Follower equipped machine to duplicate contours on metal parts

**Source:** CINCINNATI SHAPER CO.
Hopple, Elam & Garrard Sts., Cincinnati 25, Ohio

**The company** announces availability of any size in its standard line of shaping machines with a special pad-equipped base, a holder for a master form and a special table-support post as shown in the illustration. This equipment makes it possible to feed the table and work mounted on it to machine any contour initially machined into the master form in the holder.

**The machine** is operated with its standard elevating screw disconnected and retracted so the table and rail are free to move vertically as the mechanical feed screw moves it horizontally. When contours are not being cut the machine can be employed in normal manner with both vertical and horizontal feed.

BREVITY—Identify by IEN - 807 if you write the maker

## DUST COLLECTING . . Filter panel with aluminum or copper expanded metal

**Source:** RESEARCH PRODUCTS CORP.
1013-17 E. Washington Ave., Madison 10, Wis.

**600 to 1,000 cfm. at 350 fpm. flow**

**Expanded copper** in a steel frame with nickel-plated expanded-metal face grids, or heavy-duty expanded-steel grids welded in place, or expanded aluminum with nickel-plated grids in an aluminum frame are three new assemblies in the company's line of dust-collecting filter panels. The copper elements are edge bonded with synthetic rubber. All are in a double design in which the mesh grades from coarse at the entering face to fine at about the center and again from coarse at the center to fine on the leaving face. The three designs are known as Copper Industrial, Heavy-Duty Industrial and Alumaloy Industrial.

**Five sizes** range from 15 by 20 by 2 in. to 20 by 25 by 2 inches. Clean resistance is .07 in. of water at 350 fpm. Each panel is coated with an adhesive material supplied by the company. It and accumulated dust can be washed off in a stream of water. The clean filter panel is then recoated for continuing service.

BREVITY—Identify by IEN - 808 if you write the maker

## MARKING . . Die cut characters, range of colors and styles, to 2 in.

**Source:** BY-BUK CO.
4312-16 W. Pico Blvd., Los Angeles 19, Calif.

**New process** has been developed by the company in which it adheres reinforcing cardboard to sheets of Scotchlite reflective sheeting and to new Paint Film sheeting prior to die-cutting characters to adhere to a surface. The cardboard provides the required stiffness to keep the characters in original shape. It assists in aligning in the set-up operation. Following application the cardboard is stripped from the character faces leaving them clean and bright.

**The company** has dies in stock to cut letters and numerals for quick delivery in a range of colors, styles and in sizes from 2 in. up. Samples are available on request.

BREVITY—Identify by IEN - 809 if you write the maker

## MILLING . . Undercutting machine for motor and generator armatures

**Source:** HULLHORST TOOLS INC.
1917-21 Nebraska Ave., Toledo 7, Ohio

**Spindle** operation is at 40,000 rpm. through belt connection to the driving motor on this new undercutting and slotting machine. Work is positioned under the spindle for "climb-milling" action which eliminates formation of burrs. The work is supported on centers for hand indexing and is fed and retracted by turning a hand crank.

**The base** under the work table measures 6 by 9 inches. It is mounted on a sloped table top measuring 15 in. across. Swing capacity is to 6½ in. in diameter. The spindle takes various arbors for cutters with ⅛ to ¼-in. hole. Center brackets or V-block work supports are available. An adjustable stop regulates stroke length of the machine.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 810 if you write the maker

QUICK ACTION ON ANY ORDER

Ex-Cell-O Carries 300,000 Drill Jig Bushings in Stock

In addition to accuracy and long life, you get fast delivery on any order of any size when you specify Ex-Cell-O Drill Jig Bushings. That is because Ex-Cell-O stocks more than 300,000 bushings—one of the largest and most varied supplies in the world. For list of standard styles and sizes quickly available, write today for your free copy of Ex-Cell-O Bulletin 35871.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

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BREVITY—Identify by IEN - 811 if you write the maker

GET RID OF WIRES

and get foolproof connections in
RADIOS
AMPLIFIERS
SWITCHBOARDS
METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 812 if you write the maker

Watch my speed!

TIME TABLE IN SECONDS

| Pipe Size | Ream Pipe | Thread Pipe | Cut-off Pipe | Total Seconds | Pieces per 10 min. hr. |
|---|---|---|---|---|---|
| ½" | 6.8 | 15.0 | 17.5 | 38.5 | 78 |
| 1" | 6.0 | 19.8 | 21.2 | 47.0 | 64 |
| 2" | 7.8 | 25.2 | 26.6 | 59.6 | 50 |

It's EASY with the New OSTER "TOM THUMB" Portable Threader

The No. 582 is built for YOU—If you want the most advanced portable power pipe threader on the market. No other make has the EXCLUSIVE "Auto-Grip" front chuck that grips ANY kind of pipe automatically for chucking, reaming, threading, and cutting-off. Smooth, frictionless power assured because spindle, shafts, and worm are all mounted in BALL BEARINGS. Double "V" belt drive from motor to spindle assures QUIET operation . . . prevents mechanical shock and sudden overload. These and plenty more features combine to make the new No. 582 "Tom Thumb" the finest, most profitable portable pipe machine you can buy. BULLETIN 582 tells the full story. Write for free copy—Now!

THE OSTER MFG. COMPANY
2053 E. 61st St. - Cleveland 3, Ohio, U.S.A.

OSTER

First with the Best in Threading Machines Since 1893

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BREVITY—Identify by IEN - 814 if you write the maker

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**ELECTRIC SOLDERING TOOLS**
FOR DELICATE WORK

Pygmy

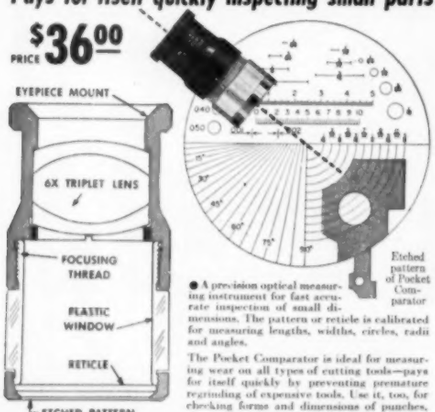
EASY TO USE

The cool, tapering wood handle permits natural writing grip. 8 1/4" long. Weighs 7 ounces. 3/16" and 1/8" tips also available.

**VULCAN ELECTRIC COMPANY**
DANVERS 8, MASS.
Makers of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Branding Irons and Electric Heating Units, including the new Vulcan Water Immersion Heater, for changing over any hot water heater to electric operation.

BREVITY—Identify by IEN - 815 if you write the maker

**New POCKET COMPARATOR**
**Pays for itself quickly inspecting small parts**
PRICE $36.00




● A precision optical measuring instrument for fast accurate inspection of small dimensions. The pattern or reticle is calibrated for measuring lengths, widths, circles, radii and angles.

The Pocket Comparator is ideal for measuring wear on all types of cutting tools—pays for itself quickly by preventing premature regrinding of expensive tools. Use it, too, for checking forms and dimensions of punches, dies, gauges, templates as well as radii, angles, chamfers, threads and small holes on production parts. Order today.

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## NEW LITERATURE—Continued

*"Send us your own new literature for review"*

**PRESSES** . . "Press-Rite" open-back inclinable press, 5 to 85 ton; illustrated design features, specifications. Bulletin P-650, 8 pages. Sales Service Machine Tool Co., 2361-65 University Ave., St. Paul 4, Minn. **IEN-089**

**PRINTING** . . Machine to print on paper, wood, leather, plastics, using colored plastic film; operating steps, examples of work. Bulletin, "Milfa-Graph", 4 pages. Milfa-Graph Inc., 350 Fifth Ave., Room 4022, New York 1, N. Y. **IEN-090**

**PROCESSING** . . Stainless-steel vacuum cooking kettle; models, specifications, standard sizes and dimensions, also coating pans. Bulletin VP-1, 4 pages. Groen Mfg. Co., 4537 W. Armitage Ave., Chicago 39, Ill. **IEN-091**

**PROCESSING** . . Solvent-recovery equipment using activated carbon; flow diagrams on typical process applications. Bulletin, "Solvent Recovery", 4 pages. Patterson Foundry & Machine Co., 50 St. George St., East Liverpool, Ohio. **IEN-092**

**PROTECTING** . . Face shields, gloves, aprons, sleeve covers, other protective equipment; illustrated models and descriptions. Catalog 1050, 12 pages. Joseph Buegeleisen Co., 1304 E. Woodbridge, Detroit 7, Mich. **IEN-093**

**PULVERIZING** . . Comminuting machines for chemical products; general description, notes on the type of materials handled, models. Folder, "Model D", 4 pages. W. J. Fitzpatrick Co., 1011 W. Washington Blvd., Chicago 7, Ill. **IEN-094**

**PUMPS** . . "Pomona" water-lubricated turbine pumps; three-page sectional view in color with captions on construction points. Bulletin 6977, 6 pages. Fairbanks, Morse & Co., 606 S. Michigan Ave., Chicago 5, Ill. **IEN-095**

**PUMPS** . . Hydraulic unit with adjustable flow to 10 gpm. each way; construction details, illustrated method of adjustment. Bulletin, "Hydropump P-100-A", 4 pages. Hydropower Inc., 3443-47 N. 35th St., Milwaukee 16, Wis. **IEN-096**

**PUMPS** . . "Gearturbo" right-angle drive head for vertical pumps; sectional view, hp. rating table, dimension, drive selection data. Bulletin B-140-1, 8 pages. Peerless Pump Div., W. Ave. 26 & Humboldt St., Los Angeles 31, Calif. **IEN-097**

**PUMPS** . . Positive-displacement units for pumping and feeding; review on models, capacities and pressures for motor and pneumatic types. Bulletin 950, 4 pages. Milton Roy Co., 1303 E. Mermaid Lane, Philadelphia 18, Pa. **IEN-098**

**PUMPS** . . Centrifugal pumps for corrosive, non-corrosive, solids-carrying liquids; catalog data on ratings and intended type of service. Manual 2300, 12 pages. Yeomans Brothers Co., 1433 N. Dayton St., Chicago 22, Ill. **IEN-099**

**RELAYS** . . Mercury-plunger design to 35 amp. on 115-volt ac.; schematic drawing of operating principle, standard units and their ratings. "Mercury Relays", 4 pages. Ebert Electronics Corp., 185-11 Jamaica Ave., Hollis 7, N. Y. **IEN-0100**

**RESEARCH** . . Contract service in electronic and other fields; data summaries on personnel, facilities, instruments. Bulletin R-7, 48 pages. Cook Research Laboratories, 1455-59 Diversey Parkway, Chicago 14, Ill. **IEN-0101**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 86*

BREVITY—Identify by IEN - 816 if you write the maker

*A News Advertisement by* Honan-Crane Corp.

**FILTERING . . "One-man" mobile unit cleans cutting oils and coolants**

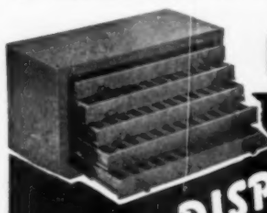
Source: HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORP.
802 Wabash Avenue, Lebanon, Indiana

New **Houdaille** Mobile Coolant Filter provides quick, simple filtration of cutting oils and coolants. Removes fine chips and contamination from the sump itself, preventing accumulation of foreign matter.

**Unit** equipped with suction hose and discharge hose, each of oil resisting neoprene, measuring 10 feet long. Close coupled centrifugal pump, jet ejector and 1 hp. motor are operated from one control only. Coolant is drawn through close-woven cloth bag which removes solid particles, such as dirt, chips and abrasives. Clean coolant is then returned to the sump. Tank containing filter bag and metal basket is fitted with quick-opening lid. When filter bag is loaded with chips or grindings, unit can be wheeled to disposal point where bag is easily removed and emptied. Bag can be washed in degreaser and reused.

**One-man** mobile unit can service any number of machine tools, will clean up an individual machine in less than 10 minutes. Eliminates messy hand-cleaning methods.

BREVITY—Identify by IEN - 817 if you write the maker



**HUOT**
**DRILL DISPENSER**

*No More Rummaging Through Stacks of Drills*

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14 1/2" long, 7 1/4" high, 7 1/4" deep. Hammerlin baked enamel finish over rugged steel. Made in three models for fractional, number or letter drills.

*Write for circular.*

By the makers of HUOT DRILL INDEX

**HUOT MANUFACTURING CO.**
565 No. Wheeler St., St. Paul W4, Minn.

BREVITY—Identify by IEN - 818 if you write the maker

**THE MOST PORTABLE GAS-DRIVEN ARC WELDER EVER BUILT**

**MODEL HGW-150**
Weighs only 365 lbs. Air-cooled gasoline engine. Heavy duty generator. Dual controls. Equipped for emergency lighting.

THIS is the welder that can be used *anywhere* because it's compact, and the lightest-weight gas driven D-C machine ever built. One man can move it easily; two men can lift it.

Yet, it is strong and durable because of a weight-saving air-cooled engine and the extensive use of aluminum. And it has the capacity to do a wide range of welding jobs in construction work, maintenance and repair.

No other machine can match the SUREWELD HGW-150 for portability and performance. And it can quickly pay for itself by cutting welding costs.

***Write today for Illustrated Bulletin***

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844 North Michigan Avenue Chicago 11, Illinois

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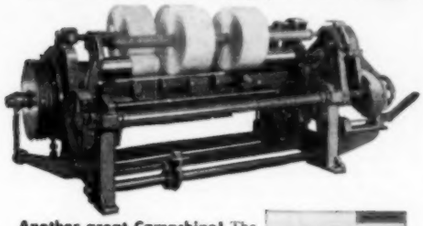
EVERYTHING FOR WELDING

Copr. 1951, National Cylinder Gas Co.

BREVITY—Identify by IEN - 820 If you write the maker

# Camachine® 28-3D

**A fast slitter-rewinder specially designed to produce top-quality rolls of coated or tacky papers and fabrics**



**Another great Camachine!** The 28-3D, featuring air-operated slitters, produces top-quality rolls of uniform density regardless of variations in the caliper of the material. Positive roll separation is assured by the use of two separate rewind shafts. Handles web up to 72" wide at speeds up to 500 f.p.m. Produces rewound rolls as narrow as 1" (or ½" with special slitters), and up to 30" dia. Write for Bulletin 2020.

AA-227

**CAMERON MACHINE COMPANY**
**61 POPLAR STREET • BROOKLYN 2, N. Y.**

BREVITY—Identify by IEN - 821 If you write the maker

# IT'S ALLIED FOR RCA SPECIAL-PURPOSE TUBES FOR INDUSTRY

**All Types in Stock**
- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
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- Cold-Cathode
- Phototubes
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- Special Types

**the world's largest distributors of RCA special-purpose tubes**

ALLIED maintains *in stock for quick shipment* the world's largest inventory of RCA special-purpose electron tubes—*of all types*. We specialize in supplying the tube needs of industrial, broadcast, governmental and other users. Shipments are made *from stock* to any part of the nation within hours after we receive your order. Fill *all* your tube needs from a *single, dependable source*.

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Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for FREE RCA Guide No. 37-046.

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BREVITY—Identify by IEN - 822 If you write the maker

# ELIMINATE . . .
1. Screw Thread Troubles
2. Solid Bushings

Stripping, abrasion, wear, corrosion, galling, and seizing are eliminated when Heli-Coil® Screw Thread Inserts are used as a permanent tough lining between thread and mating member. These stronger, more durable precision-formed wire inserts of stainless steel or phosphor bronze are designed for use in iron and steel, aluminum, magnesium and other non-ferrous metals, and in wood, plastics, and ceramics.

Heli-Coil Inserts are original equipment components in such industries as aviation, automotive, railroad, electronics, machinery, appliances and small tools. They assure production economies, improve products . . . save weight and space, make assembly and disassembly easier . . . simple. Heli-Coil Inserts are the low-cost answer to all screw thread troubles.

Write for the complete Heli-Coil design data folder and prices.

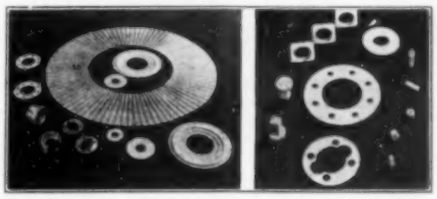
47-152 Thirty-Fifth St., Long Island City 1, N.Y.

HELI-COIL CORPORATION

BREVITY—Identify by IEN - 823 If you write the maker

## INSULATING . . Teflon fabricated to specification, sizes to 23 inches

**Source: UNITED STATES GASKET CO.**
**P. O. Box 93-A, Camden, N. J.**



**Spacers** for coaxial cables, parts for high-voltage high-temperature, high-frequency applications in electronic equipment are representative products the company is prepared to supply in fabricated or molded Teflon to specification. The shaped units are in addition to production of the insulating material in sheets, cylinders, rod, tube and bar stock.

**Power factor** is .0005. Dielectric constant is 2. The material can be employed in a temperature range between minus 90 and plus 500 deg. F. It is tough, resilient, has zero water absorption, is not subject to weathering, is chemically inert.

BREVITY—Identify by IEN - 824 If you write the maker

## FEEDING . . Electric vibrating unit with sealed drive for dusty locations

**Source: SYNTRON CO.**
**410 Lexington Ave., Homer City, Pa.**

**New design** in the company's Vibra-Flow feeding equipment is available in dust-tight assembly in which the leaf springs, armature and core are covered by gasket-sealed plates bolted to the magnet casting. The equipment is designed to suspend from overhead and is available in specified sizes to handle given bulk, dry or damp materials, hot or cold. Capacities range to hundreds of tons per hour.

BREVITY—Identify by IEN - 825 If you write the maker

## VALVE . . Bellows operated design controls flow for heating or cooling

**Source: STERLING INC.**
**3744 N. Holton St., Milwaukee 12, Wis.**

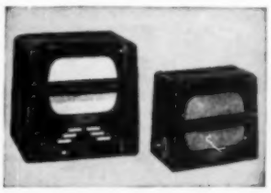
**Three sizes** between ½ and 1 in. are available in the company's recently improved Sterlco 150E temperature-control valve. Improvements since the valve was first developed and previously described IEN-2707-41 include simplified internal construction, Monel seat, thermostatic bellows, armored capillary tube, stainless-steel trim. Pressure is to 125 pounds.

**Two designs** include units to close on rising temperature for heating applications and to close on falling pressure for cooling. Representative application includes oil cooling through a heat exchanger on an injection molding machine. The valve controls flow of cooling water while the actuating bulb is in the hydraulic oil sump.

BREVITY—Identify by IEN - 826 If you write the maker

## COMMUNICATING . . Master unit for two way talk with five speakers

**Source: WEBSTER ELECTRIC CO.**
**1902 Clark St., Racine, Wis.**



**List price** is $99.50 for this new assembly of one master station and five speakers in an arrangement where all calls will originate at the master. The same equipment can be set up so calls can originate at the speakers by using one of the five lines as the call circuit.

**The master** has a plastic molded housing that measures 6⅝ by 5 by 7 inches and mounts a station-selector switch on its face. There is also a combination volume-control and on-off switch, and a talk-listen switch with an idle position.

**The speaker** unit also is in a plastic housing. It measures 5½ by 3⅝ by 5⅝ inches. As many as three of these units can be connected in parallel on one line from the master. Power input to the installation is from 110-volt ac. or dc. line.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58*

BREVITY—Identify by IEN - 827 If you write the maker

# NEW!

**Cuts full 2"**

Here's a 6" saw well-qualified to take the hard wear industrial use demands. The new Stanley W65 is made to the same high quality standards as other famous Stanley Electric tools.

Special features: Multi-grip handle, a round arbor, full ball and roller bearings, manual control on automatic telescoping safety guard. Adjustable for beveling cuts up to 45°. Base on both sides of blade allows cutting in any direction. Weight 10 lbs. Operates on A.C. or D.C. Packed in handy steel carrying case. Ask your distributor to show you a W65.

Other Stanley Safety Saws in 7", 8" and 9" sizes. Adjustable saw track available for these saws. For information, write Stanley Electric Tools, 508 Myrtle St., New Britain, Conn.

HARDWARE • TOOLS • ELECTRIC TOOLS
STEEL STRAPPING • STEEL

STANLEY

BREVITY—Identify by IEN - 828 If you write the maker

# Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

*Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.*

**THE DRYING AND CONCENTRATING COMPANY DRYER**

*Improved method for* **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

**Chemicals**
**Pharmaceuticals**
**Milk Products**
**Blood or Blood Plasma**
**Soups, Vegetables, etc.**

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

**DRYING and CONCENTRATING CO.**
225 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

BREVITY—Identify by IEN - 829 If you write the maker

# TEMPILSTIKS®

*the amazing Crayons that tell temperatures*

**in**
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
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STRAIGHTENING
HEAT-TREATING
IN GENERAL

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

**FREE**—Tempil® "Basic Guide to Ferrous Metallurgy" —14½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

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COMPANY _____
ADDRESS _____

BREVITY—Identify by IEN - 830 If you write the maker

**REEVES QUALITY FABRICS**

These famous fabrics are good-looking and stay that way, washing after washing, because they're made of fine *combed* cottons—Sanforized* and vat-dyed in colors fast to sun, water and perspiration.

*Write for full information.*

*Residual shrinkage less than 1%

Reeves PARADE TWILL "SANFORIZED" · Reeves GINGHAM POPLIN SANFORIZED · Reeves ARMY TWILL FINE COMBED YARN MADE TO GOVERNMENT SPECIFICATIONS

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 831 If you write the maker

**SAVE TIME ON THE JOB WITH VULCAN FIN-TUBE RADIATION**

Vulcan saves time and money because it is easy to install.

- Comes cut to specified lengths
- Ends threaded or chamfered for welding
- Is light in weight, easy to handle
- Easily cut to desired length on the job where necessary
- Sturdy construction — no danger of loosening fins because fins are *imbedded* by special Vulcan process

For either steam or forced hot water.
Neat appearing covers and accessories.
Send for illustrated bulletins.

FOR 25 YEARS A LEADER IN FIN-TUBE RADIATION

**THE VULCAN RADIATOR CO.**
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BREVITY—Identify by IEN - 832 If you write the maker

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## for Better Light ON the Job

***Directs Light Exactly Where Needed as Easily as Pointing Your Finger***

*Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches*

**MODEL 3267-H-174**

Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

**$6.12** EACH in pkg. of 6 Single Units **$7.65** ea.

- **Rugged Construction** to stand strains and shocks
- **Instantly Adjustable** with full swivel ball and socket joints
- **Infra-red Baked Enamel Finish** — Exterior, Wrinkled Gray — Reflector Interior, high temperature White
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- **Wired Complete** with switch socket and 8 ft. oil resistant cord

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*Localites are available through selected distributors everywhere.*

LOCALITE fostoria for Light ON the Job
Reg. U. S. Pat. Off.

# NEW LITERATURE—Continued

*"Subjects from Bearings to Wire Parts"*

**SAWING** . . Metal-cutting band saw machine; assembly views with descriptive captions, specifications on unit with capacity to 6 in. round. Bulletin, "Model 612", 4 pages. Famco Machine Co., Holborn & 18th Sts., Racine, Wis. **IEN-0102**

**SAWING** . . "Triple-Chip" circular saw blades for metal cutting; cutting action pictures, data on 8 to 70-in. blades. Bulletin 201, 8 pages. Motch & Merryweather Machinery Co., 713-17 Penton Bldg., Cleveland Ohio. **IEN-0103**

**SCAFFOLDS** . . "Waco" tubular sectional scaffolding; drawings to show features and typical uses, pictures of components and assemblies. Form PS-19, 8 pages. Wilson-Albrecht Co., 3578 Wooddale Ave., Minneapolis 16, Minn. **IEN-0104**

**SCREENING** . . "Concentric Action" vibrating screens for material from ashes to zinc ore; selection data, specification tables, drawings. Book 2354, 12 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-0105**

**SEALING** . . Packings and gaskets made of Teflon plastic; general properties, available types and styles, typical applications. Bulletin, "Teflon Packings . .", 8 pages. Garlock Packing Co., 50 Garlock St., Palmyra, N. Y. **IEN-0106**

**SEPARATING** . . Centrifugal separators for steam, air, gas lines; selection data, sample calculations to assist in application, illustrated applications. Manual, 8 pages. Centrifix Corp., 3639 Payne Ave., Cleveland 14, Ohio. **IEN-0107**

**SHAPING** . . Machine for metal, 7-in. stroke; construction points, specifications, available accessories. Form AD-615, 8 pages. Delta Power Tool Div., Rockwell Mfg. Co., 614 Vienna Ave., Milwaukee 1, Wis. **IEN-0108**

**STORING** . . Bins for storing bulk material; details on formed concrete staves employed, capacity tables on heights to 60 ft., diameter to 30 feet. Folder, "Super-Concrete Bins", 12 pages. Neff & Fry Co., 114 Elm St., Camden, Ohio. **IEN-0109**

**STORING** . . Fireproof storage cabinets for business records; illustrated models, description on their construction. Bulletin SC-679, 12 pages. Remington Rand, Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. **IEN-0110**

**STRAINERS** . . Basket-type duplex units for industrial and marine use; design details, table of specifications on ½ to 4-in. sizes. Bulletin 14-50, 4 pages. Coen Co., 38-42 Boardman Place, San Francisco 3, Calif. **IEN-0111**

**SWITCHES** . . Type-JR rotary tap and transfer multipole units; construction details, diagrams to show circuit arrangements possible. Catalog 1950-JR, 8 pages. Electro Switch Corp., 165-69 King Ave., Weymouth 88, Mass. **IEN-0112**

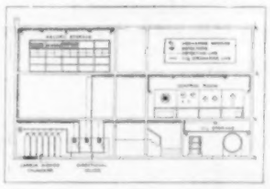
**TESTING** . . Keeler Polygraph "lie detector"; models, description on its detection of physiological response, typical use. Bulletin 131, 12 pages. Associated Research Inc., 3756-60 W. Belmont Ave., Chicago 18, Ill. **IEN-0113**

**TESTING** . . Instruments in specification assembly for television production; notes on units for rf. and if. alignment, video, final test. Bulletin 3F-951, 14 pages. Radio Corp. of America, 413-17 S. 5th St., Harrison, N. J. **IEN-0114**

BREVITY—Identify by IEN - 833 If you write the maker

## EXTINGUISHING . . $CO_2$ equipment in central location for remote areas

**Source: WALTER KIDDE & CO.**
**673-77 Main St., Belleville 9, N. J.**



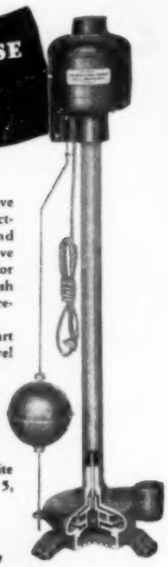
**Directional valves** in connection with a central installation of carbon dioxide cylinders and lines leading through the valves provide a new means to protect a number of remote or isolated locations in a building or manufacturing plant. Most any number of such locations can be served by the equipment assuming adequate capacity in the cylinder bank. This bank can be arranged in groups so each of several hazards can be protected by an initial discharge without disturbing a reserve group.

**The cylinder bank** connects through the directional valve frame where a valve is mounted for each space to be served. This frame is prefabricated for a given installation and ready for erection on the job. Each discharge line to a space is accompanied by a fire-detector connecting line. Within each protected area are one or more detectors of electrical or rate-of-temperature-rise design. On the discharge line is a network of Multijet nozzles. Any detector picking up a fire signal actuates the directional valve in its line. The released gas expands to 450 times its stored volume to flood the area without leaving any residue or harming any material.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59*

BREVITY—Identify by IEN - 834 If you write the maker

**FAIRBANKS-MORSE INDUSTRIAL SUMP PUMPS**



Handy, dependable. Save thousands of dollars by protecting machinery, merchandise and buildings from damage by excessive seepage and flash floods. Ideal for use in boiler and elevator pits, ash dumps, machinery base pits, storerooms, and many other places.

Fairbanks-Morse sump pumps start when water reaches pumping level . . . shut off when danger is passed. Can be left unattended. Made for 2-foot sump pits. Extension columns available when settings require them. For complete details of sizes, construction features, pumping capacities and prices, write Fairbanks, Morse & Co., Chicago 5, Illinois.

**FAIRBANKS-MORSE,**
*a name worth remembering*

DIESEL LOCOMOTIVES AND ENGINES · ELECTRICAL MACHINERY · PUMPS · SCALES
HOME WATER SERVICE AND HEATING EQUIPMENT · RAIL CARS · FARM MACHINERY

BREVITY—Identify by IEN - 835 If you write the maker

**specialists in CMP THINSTEEL**

These three steel warehouses normally carry in stock the complete range of cold rolled strip steel specialties made by The Cold Metal Products Company, including low carbon and high carbon analyses, tempered spring steel and stainless grades in the 300 and 400 series. Supply problems are now very difficult. Currently, shortages exist in some grades and sizes, but within the limits of inventory possibilities strip steel fabricators continue to find justification for the descriptive phrase long identifying all Precision produced CMP products—"More feet per pound—more finished parts per ton."

**IN THE EAST IT'S THE KENILWORTH STEEL CO.**

Located in the metropolitan New York area for quick service throughout the east. 750 Boulevard, Kenilworth, N. J. Phones: New York — COurtlandt 7-2427; New Jersey — UNionville 2-6900.

**IN THE MIDWEST IT'S PRECISION STEEL WAREHOUSE, INC.**

Well known in the Chicago district for good service and careful attention to customers' requirements. 4409-4425 West Kinzie Street, Chicago 24, Illinois. Phone: COlumbus 1-2700.

**IN THE FAR WEST AND PACIFIC COAST IT'S THE COLD METAL PRODUCTS CO. OF CALIFORNIA**

On the west coast the only specialists in light gauge precision cold rolled strip. 6600 McKinley Avenue, Los Angeles, California. Phone: PLeasant 3-1291.

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**the Cold Metal Products co.**
**YOUNGSTOWN 1, OHIO**

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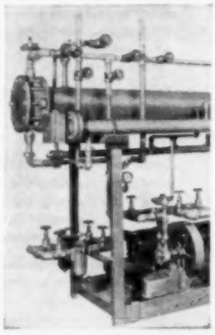
BREVITY—Identify by IEN - 837 If you write the maker

Another Profitable Application for TRENT Electric OIL HEATERS

Low Pressure Duplicate Pumping and Heating Unit, Equipped With Large TRENT Oil Heater



More and more manufacturers of processing equipment using circulating hot oil are building TRENT Electric Oil Heaters into their units.

The outstanding efficiency and low watt density provided by these modern heaters assure continuous operation without carbonization or maintenance.

Available in sizes from 1 KW. to 16 KW.

Write for complete information on Oil Heaters and other TRENT electric heating units and elements for every purpose.

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Electrically Heated Industrial Equipment
747 LEVERINGTON AVE. PHILA 27, PA.

BREVITY—Identify by IEN - 838 If you write the maker

Gleicher CUSTOM-DIE-CUT
Self-Adhesive
MASKS & STENCILS
... A Fool-Proof Short Cut on Precision RUSH Jobs!

We convert every brand of pressure sensitive tape to your specific needs!
ANY SIZE . . . SHAPE . . . PATTERN
Whether designed for
SEPARATING COLORS in brush or spray painting.
SAND BLASTING patterns on glass and soft metals.
PROTECTING highly polished machine surfaces, name plates, gauges.
STENCILS for all types of insignia and numbers.
Faster, easier to use...eliminates slow, costly handcutting.

write for FREE samples & brochures

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New
POCKET SIZE
VOLT-OHM-MIL-AMMETER
MODEL
666R
$26.50
U. S. Dealer Net
With Self-contained Resistance
Ranges to 3 Megohms

NOTE THESE SPECIAL FEATURES

**Resistance Ranges**—0-3000 Ohms to 3 Megohms, self-contained.

**Enclosed Selector Switch**—molded construction. Keeps dirt out.

**Unit Construction**—Resistors, shunts, rectifier, batteries, are housed in molded base integral with switch. Direct connections without cabling. No shorts.

**Resistors**—Precision film or wire-wound types, each in its own compartment.

**Batteries easily replaced**—Positive grip coil spring, permanent contact.

**Streamlined Styling**—Handsomely designed, pocket-size case. Only two controls, both flush with panel.

RANGES:

D.C. VOLTS: 0-10-50-250-1000-5000, at 1000 Ohms/Volt.

A.C. VOLTS: 0-10-50-250-1000-5000, at 1000 Ohms/Volt.

D.C. MILLIAMPERES: 0-10-100, at 250 Millivolts.

D.C. AMPERES: 0-1 at 250 Millivolts.

OHMS: 0-3000-300,000 (20-2000 at center scale)

MEGOHMS: 0-3 (20,000 Ohms center scale)

See your Radio Parts Distributor or write

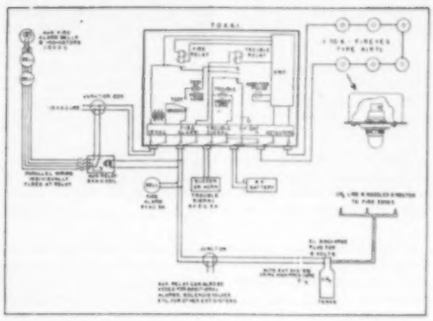
TRIPLETT ELECTRICAL INSTRUMENT COMPANY
Bluffton, Ohio, U. S. A.
In Canada: Triplett Instruments of Canada
Georgetown, Ontario

Precision first to Last
TRIPLETT

BREVITY—Identify by IEN - 840 If you write the maker

## SIGNALING . . Optical fire detectors and control for warning, extinguishing

**Source: FIREYE CORP.**
**75-79 Broadway, Cambridge 42, Mass.**



**New illustration** has been provided by the company to show the standard and optional components making up an installation of its photoelectric fire detecting, signaling and extinguishing controls, previously described IEN-8788-50. Additional data have been supplied also and are presented here.

**Indicated** to the upper right are the six detectors that make up a block to protect six rooms measuring to 40 by 40 ft. or an open area measuring 80 by 120 feet. Below these units is a side view of one of them. Each is a lead-sulphide photoconductive cell sensitive to infra-red radiation and to visible light. It feeds its electric signal through the series circuit to a tuned amplifier operating in connection with a discriminator circuit which provides a series of impulses.

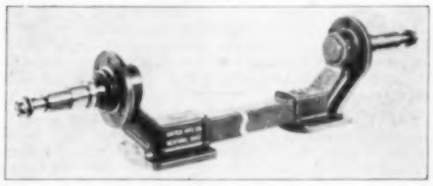
**The arrangement** accepts only those signals which pulse at least 5 times per second as in a flickering flame. Thus extraneous illumination, such as daylight, switching of lights, steady illumination is ignored. The pulse circuit operates a signal lamp to indicate continuing action. A relay closes to sound a signal powered by a battery if the pulse circuit fails.

**The control housing** provides connections for the circuits named and for an input from a power line as well as the main output alarm. This latter circuit rates 6 volts and can be connected to a variety of optional equipment for direct operation of signal devices, for relay actuation of line-voltage devices and for actuation of suitable centrally-located carbon-dioxide equipment connecting to extinguisher outlets in the protected areas. The company has prepared detail technical information which it will send on request.

BREVITY—Identify by IEN - 841 If you write the maker

## WHEELS . . Drop axle assembly takes underslung springs, to 2½ ton

**Source: UNITED MFG. CO.**
**9-13 W. Interstate St., Bedford, Ohio**

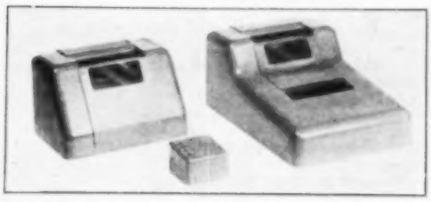


**Series 7129** is a new design in the Caravan line of drop axles for equipment mounting. Distance between spring center and track line is a bit under 8 inches. Drop dimension is 4 inches. Spring pads are integral. The assembly employs a press-fit solid square-section beam, spot welded in place in the cast drop members which include integral brake flanges as well as spring pads. The flanges are machined to take 12-in. mechanical or electric brakes for use on the wheels.

BREVITY—Identify by IEN - 842 If you write the maker

## PLASTIC PARTS . . Machine housings made of formed thermoplastic sheet

**Source: DURABLE FORMED PRODUCTS INC.**
**329 Canal St., 5th Floor, New York 13, N. Y.**



**Royalite** rubber-base thermoplastic sheet material is employed in manufacture of a new line of machine housings in which the sheet material is press formed and cured under pressure. The finished housings have excellent structural and impact strength. Colors and finishes can be specified. Size is limited only by the sheet material. The housing to the right in the illustration measures 22 by 14 by 9½ inches. Inexpensive dies are employed in the forming operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 843 If you write the maker

THE Right KNIFE CLEARANCE FOR EVERY PLATE THICKNESS

It is simple, fast and easy to adjust the knife clearance on a Steelweld Pivoted-Blade Shear to suit every plate thickness. Only turn a crank and watch a dial. That's all there is to it.

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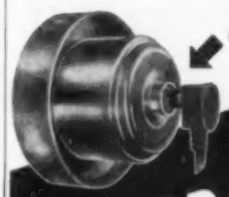
BREVITY—Identify by IEN - 844 If you write the maker

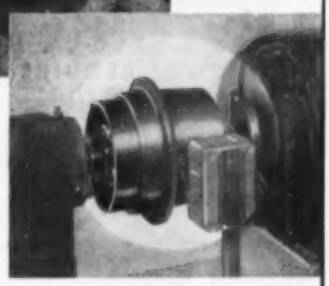


CUT-OUT POSITION

ANCHOR CUT-OUTS

INSTANTLY SHUTS OFF MOTOR WHEN AN OVERLOAD OCCURS RESETS ITSELF AUTOMATICALLY

ANCHOR CUT-OUT PULLEYS
SIZE 0
20 to 150 in. lbs.
SIZE 10
150 to 3,000 in. lbs.
SIZE 20
1,000 to 10,000 in. lbs.



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10 to 2000 in. lbs.

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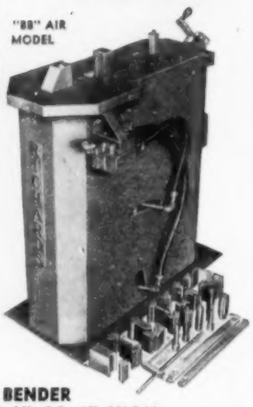
THE FAMOUS MULTIFORM **BENDER**

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

"BB" AIR MODEL



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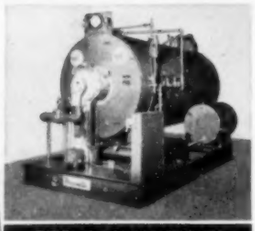
Etc.



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High and low-pressure units—15 to 500 HP.—for light oil, heavy oil, gas or combination gas-oil firing. Free catalog mailed promptly—address:

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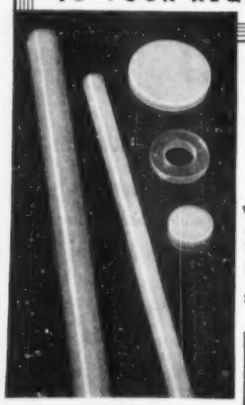

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We have the set-up and the experience to give you the best in nylon parts molding in small or large quantities.

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DENTAL MFG. CO. Dept. NP 10 East 40th St. NEW YORK 16, N. Y.

## NEW LITERATURE—Continued

*"Bulletin designation and size included"*

**THERMOCOUPLES** . . Quick-coupling connectors and panel assemblies for thermocouples; examples to show the range of designs possible. Catalog Section 23, 4 pages. Thermo Electric Co., 22-04 Raphael St., Fair Lawn, N. J. **IEN-0115**

**THERMOMETERS** . . Recording instruments for dairy industry use; description with a cut-away view, models and fittings. Catalog 1140-B, 12 pages. Weston Electrical Instrument Corp., 612-16 Frelinghuysen, Newark 5, N. J. **IEN-0116**

**TIMING** . . Electric timers, manual and cycle types; illustrated review on models, wiring schematics, standard dials, counters, enclosures. Bulletin 340, 4 pages. Eagle Signal Corp., 200 Twentieth St., Moline, Ill. **IEN-0117**

**TRANSFORMERS** . . Air-cooled distribution transformers; cut-away view of typical construction, illustrated models from 1 to 2,000 kva. Bulletin 50-FC, 4 pages. Marcus Transformer Co., 30-36 Montgomery St., Hillside 5, N. J. **IEN-0118**

**TRANSFORMERS** . . Dry units for plant use, 1½ to 2,000 kva.; construction points and application notes. Bulletin B-4428, 24 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa. **IEN-0119**

**TRAPS** . . Float-type traps for steam and air service; sectional line drawings, ratings on three types, list prices, also ¾ to 3-in. strainers. Bulletin 950, 4 pages. V. D. Anderson Co., 1931 W. 96th St., Cleveland 2, Ohio. **IEN-0120**

**TRUCK ATTACHMENTS** . . Extensions for lift-truck forks and a ram to handle open-center loads; description, dimensions, capacities. Leaflets AD-4 and AD-6, 2 pages each. Towmotor Corp., 1224-28 E. 152nd St., Cleveland 10, Ohio. **IEN-0121**

**TRUCKS** . . Power-driven hand lift trucks; catalog data on battery and engine models, motor mount drawings. Bulletin SP-1002, 12 pages. Clark Equipment Co., Industrial Truck Div., Battle Creek 49, Mich. **IEN-0122**

**TRUCKS** . . "Floormaster" hand trucks; specifications on two-wheel and four-wheel models, dollies, special-purpose units, also wheels. Bulletin 29, 16 pages. Lewis-Shepard Products Inc., 257 Walnut St., Watertown 72, Mass. **IEN-0123**

**TRUCKS** . . Hand lift truck for double-face pallets; operating details, diagram of entering action, specifications on 4,000 and 6,000-lb. models. Bulletin 222, 2 pages. Lyon-Raymond Corp., 3578 Madison St., Greene, N. Y. **IEN-0124**

**VALVE REPAIR PARTS** . . Washers, packing, reseating tools, valve repair parts, screws; data summaries on a considerable range. Catalog F, 118 Pages. J. A. Sexauer Mfg. Co., 2501-7 Third Ave., New York 51, N. Y. **IEN-0125**

**VALVES** . . Solenoid valves, relays, transfer switches; illustrated review on available models and sizes along with application notes. Circular VS-50, 4 pages. Automatic Switch Co., 389-93 Lakeside Ave., Orange, N. J. **IEN-0126**

**VALVES** . . Non-return valve for steam boiler service; illustrated details on its operation, installation, sizes. Bulletin S-1, 8 pages. Golden-Anderson Valve Specialty Co., 2079 Keenan Bldg., Pittsburgh 22, Pa. **IEN-0127**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 849 if you write the maker

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✓ MILLING ✓ PUNCHING
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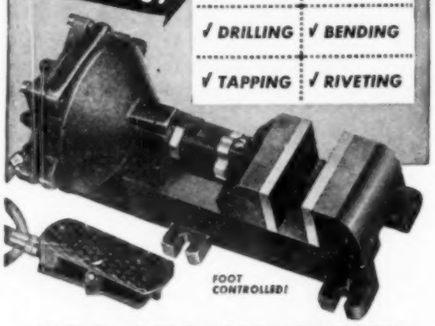


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AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

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assures dependable communication

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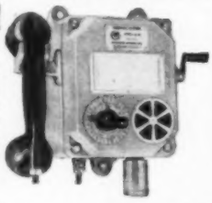

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BREVITY—Identify by IEN - 853 If you write the maker


We have the answer for stopping damage to wood caused by

**ROT and TERMITES**

At vulnerable points on your next building or remodeling job, use Wolmanized Pressure-Treated Lumber.

Wolmanized Lumber *actually kills rot and termites.* It's clean, odorless, paintable—and service records prove that it lasts 3 to 5 times longer than untreated wood.

The extra cost of using Wolmanized Lumber is *less than the labor cost alone of replacing prematurely failing, untreated wood.* Find out more about this money-saving, longer-lasting treated lumber.

THIS FREE BOOKLET SHOWS YOU WHERE AND WHY TO USE WOLMANIZED LUMBER

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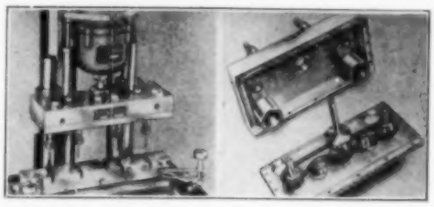
DIVISION OF F. W. DODGE CORPORATION—119 WEST 40TH STREET, NEW YORK 18, N. Y.


BREVITY—Identify by IEN - 856 If you write the maker

## THREADING . . Multi-spindle head taps specified hole pattern in work

**Source:** CHARLES L. JARVIS CO.
26 Pease Ave., Middletown, Conn.



**The illustration** shows an assembled head with four spindles in the company's new multi-spindle tapping-head design. Also shown, to the right, is an opened housing mounting two tapping spindles to show the chain connection to the central drive and the eccentric idler takeup sprockets to maintain correct chain tension.

**An assembly** includes the head for a specified hole pattern and one of the company's reversing heads for tap drive and retraction known as the Torqomatic. Size of the taps depend on capacity of the driving machine in which application is to be made. Minimum center distance is ⅝ inch.

BREVITY—Identify by IEN - 857 If you write the maker

## STORING . . Welded steel boxes to package small military spare parts

**Source:** STACKBIN CORP.
1077 Main St., Pawtucket, R. I.

**As specified by Government**

**Your attention** is called to the spare-parts boxes we described under the head of "storing" in IEN-11988-50 just in case that the heading word may have misled you from the true purpose of the box. Actually it is for storing but also it is an essential packaging unit in which government contractors must pack orders for spare military parts. The company is prepared to supply the units to meet all military requirements.

BREVITY—Identify by IEN - 858 If you write the maker

## GAGE . . Fifty-foot steel tape with constant tension spring retractor

**Source:** MASTER RULE MFG. CO.
16 W. Jackson Ave., Middletown, N. Y.

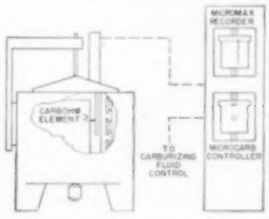
**Longboy** is a new ⅝-in. by 50-ft. steel measuring tape and formed-steel Fabricoid-covered carrying case in which is a retracting mechanism employing the Neg'ator spring, previously described IEN-10644-49. This spring and its planetary transmission exerts a constant tension on the tape for all of its extended length. The spring is released to draw the tape back by pressing a button on the case. Retraction stops when the button is released.

**List price** is $12. The tape is permanently etched to present black markings and graduations in eighths or tenths as required. Tapes can be interchanged by pulling out of the case and releasing a T-and-slot end connection. Each tape is wentherproofed with nickel. Cleaning is by wiping with an oiled rag. Weight is 1½ pounds.

BREVITY—Identify by IEN - 859 If you write the maker

## HEAT TREATING . . Carbon control for atmosphere in a Homocarb furnace

**Source:** LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.




**Microcarb** is a new control that has been developed by the company to apply on its Homocarb heat-treating furnace to regulate carbon potential in the furnace atmosphere in order to control the surface carbon content of steel being treated in the furnace. The equipment is available on new furnaces to specification and on certain that are now in service.

**Control** centers at a Carbohm detecting element which is set into the furnace work chamber like a thermocouple. It senses the atmosphere electrically in proportion to the carbon potential. It connects to a controller which adjusts the flow of carburizing fluid to hold any selected value between 0.15 and 1.15 per cent carbon. A recorder is included to draw a continuous trace.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 860 If you write the maker


*Air Power? Fluid Power?*

for Efficient Application and Control of EITHER ...*Specify* NOPAK Valves and Cylinders

Standard Models meet most application requirements. All 4 classes of NOPAK Cylinder construction are available in 6 standard mounting styles. NOPAK Rotating Disc Valves for low pressures in Hand, Foot, and Solenoid Models: NOPAK Balanced Hy-Pressure Valves to 2000 P.S.I. For complete data and descriptions refer to Sweet's File for Product Designers.

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Write for NOPAK Bulletin SW-1
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NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

A 5871-1/9


BREVITY—Identify by IEN - 861 If you write the maker


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NOW YOU CAN IMPROVE liquid handling *throughout* your plant. Low-cost Tokheims eliminate dangerous dripping, dispense fluid practically free of sediment or condensation, conserve on drum storage space. Easy to operate. High vacuum. Self-priming. No wasted motion. Operate with a single diaphragm, pumping on both back and forward strokes. Write factory regarding your particular needs.

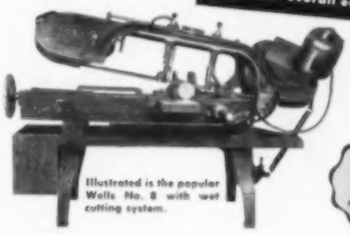
TOKHEIM HIGH VACUUM HAND PUMP

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Ave., Fort Wayne 1, Ind.
Factory Branch: 1309 Howard St., San Francisco 3, California


BREVITY—Identify by IEN - 862 If you write the maker


On cut-off jobs... *You benefit 4 ways with Wells Saws*

1. Fast, continuous cutting action.
2. Greater accuracy on each job.
3. More pieces per length of stock.
4. Greater overall economy.



Illustrated is the popular Wells No. 8 with wet cutting system.

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HORIZONTAL band sawing is the modern, cost-cutting way to handle cut-off jobs . . . and Wells Saws are the leaders among horizontal metal cutting band saw machines. Simplicity of design means fewer moving parts and easy operation. Ruggedly built to increase productivity and reduce cutting costs, a Wells Saw pays for itself quickly and will give you years and years of dependable, satisfactory service.

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*Products by Wells are Practical*

METAL CUTTING BAND SAWS

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1111 MADISON ST., THREE RIVERS, MICH.

BREVITY—Identify by IEN - 863 If you write the maker

SEE WHAT YOU'RE DOING!

Kalamazoo

METAL CUTTING BAND SAW

Only Kalamazoo gives you "full view" cutting action! Operator looks directly down into cut . . . for a constant check on cut-off accuracy. This is one of many exclusive Kalamazoo features for fast, accurate, low-cost cutting of angle iron, tubes, bars, pipe. Sturdy, rugged, portable. 4 Timken bearings! 30 second blade changes. No burr, minimum kerf. Write today for full details on the Kalamazoo.

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## NEW LITERATURE—Concluded

*"These reviews total 140 this issue"*

**VALVES** . . "Self-Seald" lubricated plug valves; cut-away construction views, notes on operation, data on ½ to 12-in. sizes. Bulletin 39-5, 4 pages. Homestead Valve Mfg. Co., P. O. Box 85, Coraopolis, Pa. **IEN-0128**

**VALVES** . . Boiler water feed valves, float-operated; cut-away views on several models, condensed catalog data on service range, list price. Bulletin C-44, 4 pages. McDonnell & Miller Inc., 3502 N. Spaulding Ave., Chicago 18, Ill. **IEN-0129**

**VALVES** . . Integral-bonnet units, 1,500 and 2,500 lb.; construction points on globe, angle, Y designs from ½ to 2 inches, check valves. Folder 105, 6 pages. Wm. Powell Co., 2523-27 Spring Grove Ave., Cincinnati 22, Ohio. **IEN-0130**

**VALVES** . . Particularly for refrigeration use, also fittings, accessories; sizes, specification and application data, list prices. Catalog R-4, 24 pages. Superior Valve & Fittings Co., 1511 W. Liberty Ave., Pittsburgh 26, Pa. **IEN-0131**

**VALVES** . . Blow-off type for high-pressure boilers to 2,500 lb.; operation described by text and pictures, ratings. Bulletin B-433, 24 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. **IEN-0132**

**VIBRATING** . . Pneumatic units for bins, hoppers, chutes, equipment use; specifications on 8 types and examples of their use. Bulletin 50, 8 pages. SPO Inc., 6452 Grand Division Ave., Cleveland 5, Ohio. **IEN-0133**

**WATER TREATING** . . Sludge contact reactor for water clarification in a variety of industries; operation drawings and details. Bulletin 5001, 16 pages. Cochrane Corp., 3132 N. 17th St., Philadelphia 32, Pa. **IEN-0134**

**WATER TREATING** . . Condensed review on company's line including ion-exchange, hot-process, pressure and gravity-filter, deaerator equipment. Bulletin 2292, 8 pages. Permutit Co., 330 W. 42nd St., Room 700, New York 18, N. Y. **IEN-0135**

**WELDING** . . Electrodes for shielded-arc welding; properties, uses, sizes on types for steel, cast iron, stainless, hard surfacing. Pocket Catalog R7-8, 56 pages. Harnischfeger Corp., 4402 W. National Ave., Milwaukee 14, Wis. **IEN-0136**

**WELDING** . . Inert-arc welding equipment; description of the process, argon or helium shielding, operating hints, company's equipment. Bulletin E-142, 8 pages. Metal & Thermit Corp., 100 E. 42nd St., 17th Floor, New York 17, N. Y. **IEN-0137**

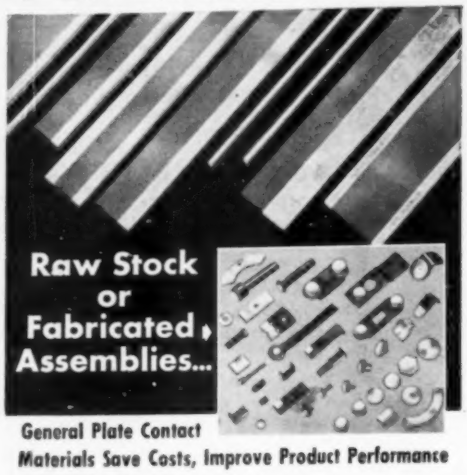
**WEIGHING** . . Automatic scales for weighing coal; operating sequence diagrams, description, picture details on components, accessories. Bulletin 0150, 12 pages. Richardson Scale Co., 666-700 Van Houten Ave., Clifton, N. J. **IEN-0138**

**WEIGHING** . . "Load King" scale with pneumatic control for container filling; illustrated review of features and uses. Mailing folder, "What Make . .", 4 pages. Yale & Towne Mfg Co., 11002 Roosevelt Blvd., Philadelphia 15, Pa. **IEN-0139**

**WIRE PARTS** . . Design suggestions on wire parts for product application in the form of examples, also assemblies with stampings. Pocket folder, "Be Prepared", 6 pages. E. H. Titchener & Co., 65-69 Clinton St., Binghamton, N. Y. **IEN-0140**

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . .* *See Page 50*

BREVITY—Identify by IEN - 867 If you write the maker

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The big advantage of General Plate Laminated contact materials is that they give you solid silver performance at a fraction of the cost of solid silver. Why — because General Plate permanently bonds a layer of silver to suitable inexpensive base metal, thus providing a contact face of high electrical conductivity.

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Division of Metals and Controls Corporation
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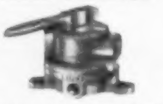
BREVITY—Identify by IEN - 864 If you write the maker

HANNIFIN AIR CONTROL Valves

NEWEST TYPES! EXCLUSIVE DESIGNS for EVERY PURPOSE!

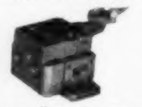
THE Hannifin line of Air Control Valves is complete—sizes and types for every purpose! Hannifin leads with newest, exclusive designs for fast, effortless control of air cylinders, presses, and other air operated equipment. Ask for recommendations.

"PACKLESS" HAND OPERATED



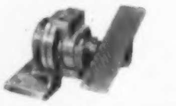
Simple, smooth-acting, positive 3-way or 4-way valves. "Packless" rotary disc type. Self-lapping. Sizes from ⅛" to 1¼". *Ask for Bulletin 57W.*

"EFFORTLESS" HAND OPERATED



Fast, new, finger-tip, pilot operated sliding disc valve. Effortless; air pressure does the work! For single or double acting cylinders. *Ask for Bulletin 241.*

"PACKLESS" FOOT OPERATED



Treadle type; leaves operator's hands free for other work. Tight-sealing, self-lapping, rotating bronze disc. Sizes ¼" up to ¾". *Ask for Bulletin 57W.*

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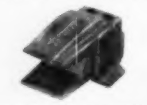

Fast, new, pilot operated, disc type valve. Light, effortless action. Rugged construction. With or without pedal guard. *Ask for Bulletin 240.*

HANNIFIN CORPORATION
1107 South Kilbourn Avenue • Chicago 24, Illinois

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DISTILLED WATER?

DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed, Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

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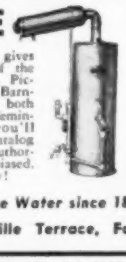

Catalog #123 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

First in Pure Water since 1878

Barnstead STILL & STERILIZER CO.

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This KENNAMATIC TOOL has 8 long-lasting KENNAMETAL Cutting Edges!

• Insert can be indexed, turned end-over-end, or changed without adjusting tool holder setting.

• Resharpening merely requires squaring off both ends of insert.

• Shank can be used indefinitely —insert is replaceable.

This tool is thermal-strain-free. Its Kennametal insert can be sharpened scores of times and advanced to cutting position by means of back-up screw.

Now being used with outstanding results, in hundreds of shops, for machining steel, cast-iron, and non-ferrous materials.

KENNAMETAL Inc.
Latrobe, Pa.

MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

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You can help her, or thousands like her by becoming a Foster Parent . . . It costs only $15 a month. You will receive a case history and photograph of the child. Correspondence through our office is encouraged.

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FOSTER PARENTS' PLAN FOR WAR CHILDREN
55 West 42nd St., New York City 18

BREVITY—Identify by IEN - 869 If you write the maker

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO ALUMINUM SPEED SCALE

For increased production at lower cost! One operator with one Speed Scale does as much as two operators with ordinary scales. Sturdy, precision built, super-accurate. Ends overweight losses.

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MAKERS OF FINE SCALES SINCE 1900
541 N. PARK AVE. • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

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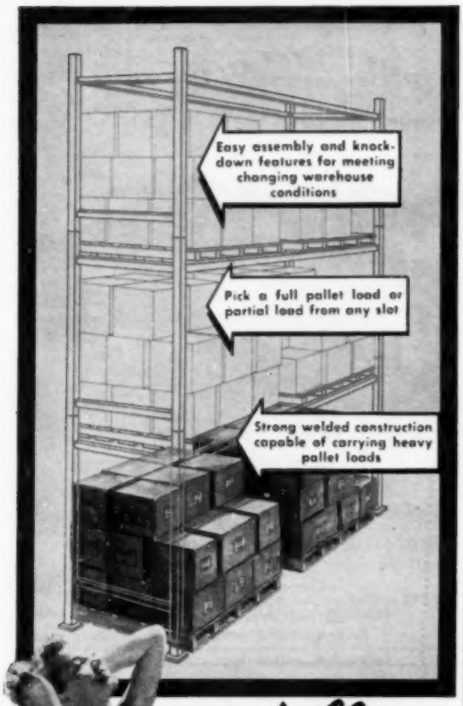
BREVITY—Identify by IEN - 871 if you write the maker



Well Stacked!

Prefabricated pallet racks by E.M.I. permit stacking to conserve floor space without tying up low level material. They are engineered for strength and safety and there's a type to suit your particular needs.

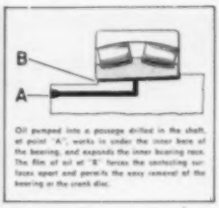
Write for our catalog. It illustrates all types.

EQUIPMENT MFG. INC.
21564 HOOVER, DETROIT 5, MICH

BREVITY—Identify by IEN - 873 if you write the maker

## COMPRESSOR . . Motor driven duplex, 350 to 10,000 cfm., is roller bearing

**Source: CHICAGO PNEUMATIC TOOL CO.**
**6 E. 44th St., 3rd Floor, New York 17, N. Y.**




**Roller bearings** for the crankshaft, crankpins and crosshead pins feature the construction of this new Class O-CE motor-driven compressor. They are spherical-roller design on the crankshaft and crankpins, needle design on the crosshead pin. Their use is made practical by the company's development of hand-hydraulic equipment for what it calls its Hydraulic Injection method for bearing application and removal in the field. The inner races of the spherical bearings are tapered to fit a taper on the shaft and on the crankpins. The crank discs also are taper fitted to the ends of the crankshaft.

**Oil passages** reach through the shaft and pins from their ends to central circumferential grooves under the races and under the bore of the crank discs. A hand-hydraulic pump applies to build up pressure and inject a film that expands the assembled part, separating the contact surfaces and reducing friction to a point where assembly or disassembly is a hand operation. Outer races are held under clamp-type caps in the compressor housing and by light press fit in the connecting rod. The housings on both sides of the motor are closed for flood lubrication from internal supply.

**Bulletin 726-5**, 28 pages, presents excellent illustrated description of the line, details the assembly elements, provides sectional views of the complete machine and its step control, includes data on the intercooler and accessory parts with a tabulation on displacement, power input, space required.

BREVITY—Identify by IEN - 874 if you write the maker

## ROOFS . . Engine driven machine applies cold asphalt to roof surface

**Source: TURNER APPLICATOR CO.**
**50 Industrial Ave., Port Jefferson, Ohio**

**Roofs** that are flat or slightly inclined can be coated with cold asphalt by application of this new machine. It deposits the asphalt in front of a spreading brush to be further treated by a second series of rotating brushes and a final straight unit that leaves a smooth even finish.

**The machine** is made in two models taking 18 and 36-in. brushes. Three sections permit disassembly for handling to and from the job. An oil pan is supplied to soak the brushes when they are not being used.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 875 if you write the maker

## Looking For IDEAS?

Every issue of Industrial Equipment News includes more than 1200 product ideas, so this is the spot to find them.

*If you don't find your needs in this particular issue, write, wire or phone our Reader Service Department where we maintain the most complete files of product source information available anywhere.*

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THOMAS PUBLISHING COMPANY
461 Eighth Avenue New York 1, N. Y.

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COSTS REDUCED 25% ANNUALLY

This special heat-resistant F-33 Feeder, equipped with variable control of flow, feeds parts to an electric heat-treating furnace. It reduced the cost of this operation by 25% annually.

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"Vibra-Flow"

VIBRATORY FEEDERS

HOT, COLD, DRY, DAMP, FINE, ABRASIVE OR LUMPY—will handle most types of bulk materials—at variably controlled rates from POUNDS to hundreds of TONS per hour—to MIXERS, SCREENS, OVENS, DRIERS, PACKAGING AND BAGGING MACHINES, BELTS, CRUSHERS, ETC.

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SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 877 if you write the maker

THREE DIAL SIZES
12 INCH
24 INCH
30 INCH

LOW HEAD ROOM

MODELS 500 TO 100,000 POUNDS CAPACITY

HYDRAULIC ACCURACY

HYDROSCALE

A rugged, compact crane scale that eliminates the need for weighing stations by checking the load when you lift to move it. Eliminates equipment tie-ups and lost man hours. Write for our catalog today.

SAVE TIME AND SPACE

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Sicon formerly MICO

Silicone-Base High Heat-Resistant Finish

PROTECTS THIS PRODUCT AGAINST TEMPERATURES OF 870° (F.)

The interior parts of this miniature Inferno are SICON-coated.

☆ It takes an unusual finish to withstand the constant high heat generated by the combustion chamber of this Super Flame Oil Heater manufactured by the Queen Stove Works. SICON lengthens the life of this unit because it does not break-down like ordinary finishes due to its amazing stability under high heat. SICON is the first commercially priced silicone base finish that can be applied by brush, spray or dip and which either air dries or adapts itself to any existing force drying system. Write for data.

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can be a good first step toward improving spraying operations in your plant. See for yourself how Spraying Systems' specialized experience in spray nozzle design and manufacture can work for you.

Get the EXACT spray nozzle type and size to fit your need.

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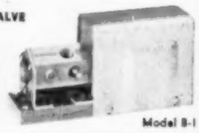
Now, PRECISION CONTROL
for ALL Air Operations . . .
HI-CYCLIC AIR VALVES

NEW Hi-Cyclic Air Valves fill the need for a *fast, accurate, smooth* control for air power. Hi-Cyclic Valves function as ordinary operating valves; control air cylinder stroke to .001"; reciprocate mechanically or electrically; control pressure in both ends of the cylinder; stop and return the stroke at any point without overtravel; control stroke speed in either direction; operate on any airline pressure as well as 1" of vacuum; consume air in *direct ratio* to work done.

Investigate the revolutionary Hi-Cyclic Valve. Write for details and recommendations.

HI-CYCLIC SINGLE SOLENOID VALVE

Instantaneous operation. Suitable for conventional and fast operations up to 700 cycles per min. Readily adapted to hand, foot or knee switch control. Available as 3, 4, or 5-way valve in 1/8", 1/4" and 3/8" ports.



Model B-1

PILOTED MASTER HI-CYCLIC VALVE

Hand controlled or remote piloted by Model B-1/4" valve. Available in 3, 4 and 5 ports, 3/8". For high speed and extreme accuracy, this valve can operate on oil and be piloted by air.

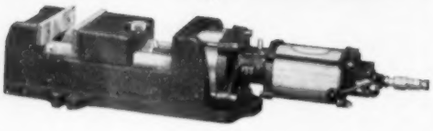
Model M-1

Bulletin 10 describes Hi-Cyclic Basic Valves; Single and Double Solenoid Valves; Heavy Duty Piloted Valves; Hydraulic Valves. Write for your free copy.

BECKETT-HARCUM CO., 1144 Wayne Rd., Wilmington, O.

BREVITY—Identify by IEN - 881 If you write the maker

NEW AIR-HYDRAULIC
MILLING MACHINE VISE
Develops
15,000 LBS. PRESSURE



THE Bellows Air-Hydraulic Vise develops a clamping pressure of 150 times operating air line pressure. Jaw width — six inches. Jaw opening adjustable up to 5".

The Air-Hydraulic Vise is complete with either a built-in mechanically operated valve for hand operation or for mechanical synchronization to machine movement, or with the built-in Bellows low voltage solenoid operated valve for electrical operation. One flexible hose only air connection required.

*Write for Bulletin 761, Dept. IEN 151*

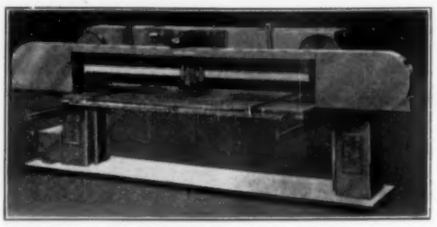
925

The Bellows Co.
AKRON 9, OHIO

BREVITY—Identify by IEN - 882 If you write the maker

## WOOD WORKING . . Sanding machine provides 8 ft. stroke for sanding pad

**Source: WYSONG & MILES CO.**
**623-27 Fulton St., Greensboro, N. C.**



**No. 610** is a new machine in the company's line of belt-type sanding machines in which a pad backs up the belt and is reciprocated by hydraulic control through an 8-ft. maximum stroke. Work mounts on a wood-faced table that rolls at 90 deg. with the length of the belt to progressively cover the work.

**Control** centers at pushbuttons to start and stop the belt motor, raise and lower the table and start and stop the sanding pad. The hydraulic equipment is driven by a 7½-hp. motor. Moving parts operate in an enclosed oil bath so there are only two external points that require lubrication and there is no danger of spoiling work with dripping oil.

BREVITY—Identify by IEN - 883 If you write the maker

## STEELS . . New method developed to remove weld discoloration from stainless steel

Armco Steel Corp.
701-5 Curtis St., Middletown, Ohio

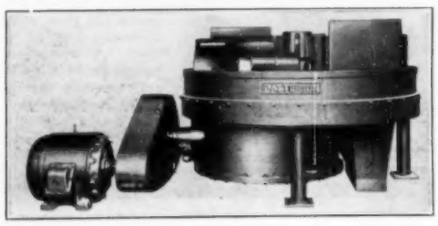
**Equipment required** for a new method of cleaning weld discoloration from stainless steel includes a power source of direct current at 6 to 9 volts and 5 to 6 amperes, a copper rod, short pieces of rubber tube to keep the rod from touching the steel, and a small amount of acid solution. The copper rod is connected negative, the stainless part positive.

**The surface** is wet with acid, usually 50 per cent phosphoric, and the rod passed over it. Weld discoloration comes off at about 2 fpm. The method passivates the cleaned area, also will remove light scale. Flat areas can be cleaned by a copper strip wrapped in asbestos or glass cloth.

BREVITY—Identify by IEN - 884 If you write the maker

## PROCESSING . . Plasticizing machine combines mixing and pulverizing action

**Source: PATTERSON FOUNDRY & MACHINE CO.**
**50 St. George St., East Liverpool, Ohio**

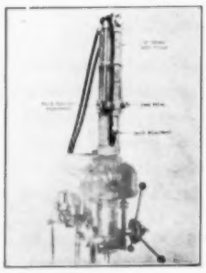


**Dry materials** in crushed form and liquids are introduced into this new machine near its center. The two are mixed and moved radically outward where mulling wheels riding on a central spider act to reduce the size of the solids and to mix them with the liquid for final delivery in plastic state for drying or further processing. The pan unit is available in sizes to 10 ft. in diameter.

BREVITY—Identify by IEN - 885 If you write the maker

## DRILLING . . Air-hydraulic cylinder feeds, retracts drill machine spindle

**Source: GENERAL PACIFIC CORP.**
**1503 E. Washington Blvd., Los Angeles 21, Calif.**



**Time Saver** trade names new design of the company's drilling-machine air-hydraulic feed equipment previously described IEN-7945-47. The new unit provides a controlled stroke maximum at 4 inches. As in the previous design it is actuated by momentarily depressing a foot valve to admit compressed air from a shop line. The unit then sets up rapid approach, changes to feed action, releases the air pressure and reverses at the predetermined depth for return to top position by spring pressure where the cycle stops.

**A hydraulic check** is adjustable for feed rate. Adjustment also is provided in air pressure for approach rate. The equipment is available for Atlas, Buffalo, Canedy-Otto, Delta and Walker-Turner drilling machines.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 886 If you write the maker

NEW DEEP-BOND COATING makes SURESEAL P/K APRONS last longer

Surety's new deep-bond process forces Sureseal PK Coating into the warp of the strong apron fabric. This deep penetration results in better adherence, greatly improved chemical resistance, longer wear—and a big savings for you in apron costs.

Deep-bond coated Sureseal PK Aprons are available in three standard sizes, coated one side or both sides. Surety aprons are also available with deep-bond vinyl coating.

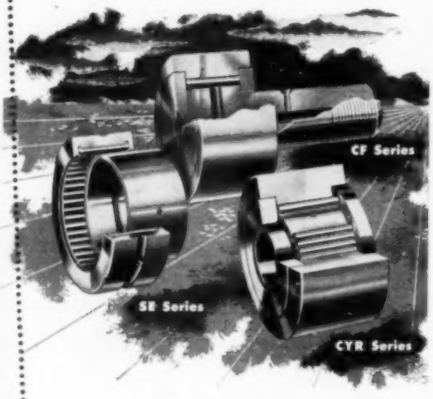
Write for complete data and prices.

THE SURETY RUBBER CO. CARROLLTON, OHIO DEPT 1

IN CANADA: Safety Supply Co., Toronoto, Ontario

BREVITY—Identify by IEN - 887 If you write the maker

"Longer life and greater efficiency with McGILL MULTIROL Bearings"




Compared with friction hampered plain bearings McGILL MULTIROL full type roller bearings resist wear because of their easily lubricated roller line contact with raceways. Longer life and greater efficiency is the natural result of the constant precision maintained in the bearing. Lubrication is simplified and required much less frequently. Maintenance is free of costly down time for periodical adjustments and bearing replacement.

MULTIROL bearings are your assurance of adding these advantages to the operation of your machinery. Millions in service to date prove such exclusive features as one piece outer race and roller retaining end shoulders, and lubrication reservoirs above roller ends in the SE Series. CF and CYR Series have thick outer race sections for heavy shock load in cam action applications. Mounting is possible with or without stud.

*Write for Bulletins on MULTIROL Bearing series.*

McGILL MANUFACTURING CO., INC., BEARING DIVISION
100 N. LAFAYETTE ST., VALPARAISO, INDIANA

McGILL precision bearings

BREVITY—Identify by IEN - 889 If you write the maker

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OVER 30 YEARS

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- 1000 or more copies from 1 stencil . . . one inking
- Non-mechanical . . . made of non-corrosive metal
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- 8 Complete Outfits . . . $9.50 to $39.50

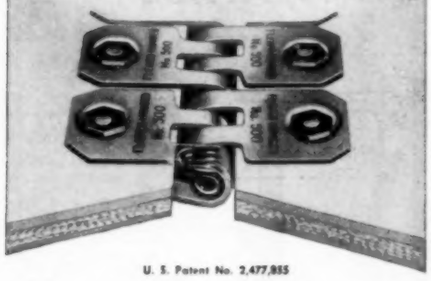
No. 1—RUBBER STAMP AND SHIPPING TAG SIZE
Durable case includes 25 stencils, ink, ink brush, stylus pen, writing board, illustrated instructions
$9.50 f.o.b. factory COMPLETE

At Your Office or Shipping Room Supply Dealer

BREVITY—Identify by IEN - 890 If you write the maker

. . . the new separable

# FLEXCO HINGED BELT FASTENERS



U. S. Patent No. 2,477,855

- For joining grader, trencher, ditcher and other earth moving conveyor belts.
- For belts ⅜" to ½" thick.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.

*Order From Your Supply House. Ask for Bulletin HF 500.*

FLEXIBLE STEEL LACING CO
4610 Lexington St., Chicago 44, Ill.

BREVITY—Identify by IEN - 891 If you write the maker

# ROLL TRUCKS & SKIDS

ROL TRUK

● The RolTruk is a heavy duty truck that easily lifts and moves cylindrical items weighing up to 2000 lbs. Various models for more efficient, easier handling and transporting of paper rolls, barrels, drums, kegs, etc. Bulletin 1ORT.

● The Ironbound "safety-skid" with rounded corners, flush angles and countersunk bolts. This construction assures greater operator safety at a minimum of cost. Still the low-cost time proven method for handling of materials.

★ Skid with safety-type legs and reversible box top. Built so that additional skids and box tops can be tiered to any height. This is only one of the many specially designed skid and semi-live skid super structures—Ironbound engineered—for lower cost material handling.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

SKIDS • SEMI-LIVE SKIDS • DOLLIES • FLOOR TRUCKS

BREVITY—Identify by IEN - 892 If you write the maker

## WELDING . . Spot weld machine adjustable in field for various metals

Source: SCIAKY BROS. INC.
4917 W. 67th St., Chicago 38, Ill.

Type PMCO 2ST-100-36 is a new assembly of the company's press-type Modu-Wave air-operated and electrically-controlled spot welder with adjustments by which the one machine will weld various metals and a range of thicknesses for each. It applies on aluminum, brass, magnesium, nickel, mild and stainless steel. Rating is 100 kva. at 50 per cent duty cycle with operation on 220 or 440-volt 60-cycle 3-phase ac. Throat depth is 36 inches. Work height is 9 to 20 in. between the arms. Total stroke is 4 in. with the working portion at ⅛ inch.

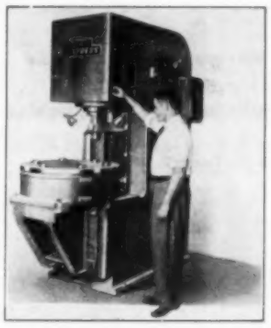
**Welding ranges** are two thicknesses of .022 to .156-in. low-carbon steel, .022 to .100-in. nickel alloys, .025 to .081-in. aluminum and magnesium, .025 to .078-in. air-hardening steels, .022 to .100-in. stainless steels. Standard controls include timers for squeeze, weld interval, hold, off, heat, current decay, cool, recompression delay. The machine will make 100 welds per minute on two thicknesses of .040-in. light-metal alloys, 130 welds per minute on .040-in. clean mild steel.

**Bulletin 134-ST**, 6 pages, presents illustrated description of the machine, includes data on various methods for operation and control to suit given metals.

BREVITY—Identify by IEN - 893 If you write the maker

## PRESS . . Self-contained hydraulic, 50 ton, 15 in. stroke, 12 in. throat

Source: DENISON ENGINEERING CO.
1158-62 Dublin Road, Columbus 16, Ohio



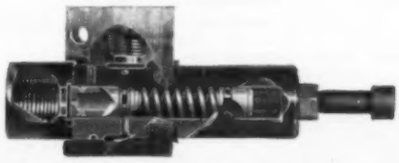
**New unit** rating of 50 ton has been added to the company's Multipress line of self-contained hydraulic presses in which a 25-ton assembly was previously described IEN-4325-49. Work surface measures 31 by 19½ inches. Bed to ram is maximum at 24 inches. A hydraulic index table measuring 33 in. in diameter and providing 6 or 12 index stations can be supplied. The table is synchronized with ram action with provision to skip non-tooled stations. Manual control or automatic operation can be specified.

**The ram** approaches the work at variable speed to 290 ipm. and operates at pressing speed to 145 ipm. Each is independently adjustable along with stroke length and pressure exerted on the work. Reverse takes place, as set, on reaching a predetermined pressure or a given length of stroke.

BREVITY—Identify by IEN - 894 If you write the maker

## VALVE . . Hydraulic flow control for constant flow on changing pressure

Source: WATERMAN ENGINEERING CO.
719-23 Custer Ave., Evanston, Ill.



**Adjustable flow** holds at a constant rate even though pressure fluctuates by application of this new Model-320 design in the company's line of valves previously described IEN-3451-46. As in the previous design the valve controls adjustably in one direction, permits free return in application on a hydraulic power cylinder.

**Four sizes** are ¼ to ¾ inch. Overall length is about 4½ to 7½ inches. The rectangular body section is 1¼ by 1½ in. to 2 by 3 inches. The smallest unit has an adjustment range from 1½ to 3 gpm. The largest will set for 8 to 16 gpm. Maximum pressure is 3,000 pounds.

**Spring-backed piston** in the housing is mounted in front of the adjusting screw shown to the right in the illustration. It carries a calibrated orifice, operates axially on change in inlet pressure so increase results in throttling action to hold the flow constant for the given spring setting. Return to normal pressure releases the piston.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 895 If you write the maker

Traffic lanes take a beating. Renew and protect them with Plastic Rock. It packs hard, improving under heavy traffic. Ten-year old floors show no wear. Plastic Rock reduces noise, is fire-resistant, skid-safe, wet or dry; bonds perfectly to concrete, wood or steel. All ingredients packed complete in a handy barrel. Your own crew or contractor can easily apply. Plastic Rock puts shock-absorbers on your floor.

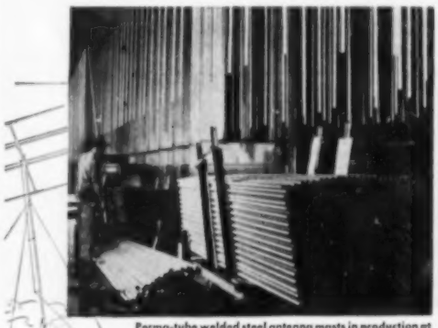
in 48 HOURS!

*Ask for Report 220-Q-1.*

UNITED LABORATORIES, INC., 16603 Euclid Ave., Cleveland 12, Ohio

ULI PRODUCTS AND PROCESSES for PROTECTING PROPERTY
Field Representatives All Over The World

BREVITY—Identify by IEN - 896 If you write the maker



Permo-tube welded steel antenna masts in production at Electricweld Tube Division, Jones and Laughlin Steel Corp., Oil City, Pa., where tough, all-weather-resistant coating based on VINYLITE Brand Resins is applied.

# Steel Gets Dressed To Go Outdoors

Wet, corrosive atmospheres hold no more terrors for tubular steel products—dressed in a coating tailored with VINYLITE Brand Resins. Such products as TV antenna masts, drill pipe, and similar equipment last longer . . . do a better job.

The tubing gets a special VINYLITE Resin-base primer coat. Then it is dipped in the VINYLITE Resin-base paint. These products have withstood salt spray tests for more than 2000 hours, and accelerated weather tests equal to five years. They can be bent, shaped, and fabricated by conventional methods without harming the finish.

VINYLITE Resin-base coatings strongly resist water, weather, sunlight, oils, greases, alkalies, most strong acids. They protect containers from contents and contents from containers. Properly formulated they are tasteless and odorless . . . can be produced in any color.

You will find them widely used today safeguarding storage tanks, oil equipment, pipes and fittings of all kinds in hundreds of plants—wherever corrosive conditions must be dealt with.

Why not find out more about what well-dressed metals are wearing today—indoors and out, in any climate? For a list of representative suppliers, write Dept. JO-3.

Data on tubing coatings furnished by Thompson & Co., Oakmont, Pa.

Enlarged ends of antenna mast sections fit snugly over reduced ends to speed installation. There is no risk of chipping the strongly bonded VINYLITE Resin-base coating.

Vinylite BRAND RESINS

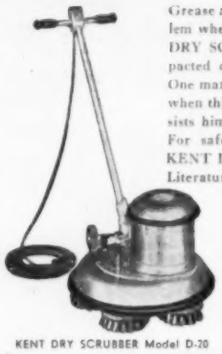
BAKELITE DIVISION UCC

BAKELITE DIVISION
*Union Carbide and Carbon Corporation*
30 East 42nd Street, New York 17, N.Y.

BREVITY—Identify by IEN - 898 if you write the maker

**Clean grease-caked floors quickly!**

**KENT DRY SCRUBBER**



Grease accumulations are no problem when the sturdy KENT D-20 DRY SCRUBBER tackles the impacted dirt on your plant floors. One man does the work of several when this dependable machine assists him—and he does it better! For safety's sake, see what the KENT DRY SCRUBBER can do! Literature available on request.

**KENT Brushes are self-sharpening**

Five individual brushes rotate as a unit, maintain top cutting efficiency as they work!

KENT DRY SCRUBBER Model D-20

**See us at Booth 212, PLANT MAINTENANCE SHOW Cleveland, January 15-18!**

CLEAN WITH **KENT** EQUIPMENT

**THE KENT COMPANY INC., 437 CANAL ST., ROME, N.Y.**

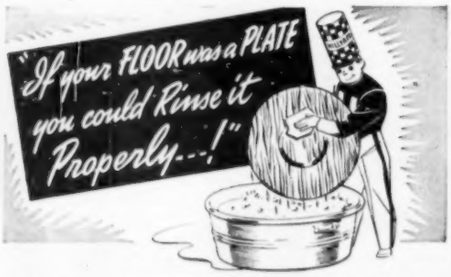
BREVITY—Identify by IEN - 899 if you write the maker

RESOLVE IN 1951 to improve your products . . . especially radio, armament and power units coming under government contract. Let Guardian, No. 1 supplier of *improved* electrical controls, produce single units or complete control assemblies for you . . . in quantity. 'Guardian GOVERNMENT APPROVED CONTROLS will insure smooth, satisfactory performance.

*The Series 335 D. C. Relay shown above, is typical of Guardian units built to the rigorous standards of aviation relays. Furnished open, or with a variety of HERMETICALLY SEALED housings.*

**GUARDIAN ELECTRIC**
1620-A W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 900 if you write the maker




But since floors CAN'T be rinsed properly—choice of a cleaning agent becomes doubly important to management. For, it isn't traffic that wears out floors . it's improper cleaning with harsh scrubbing compounds or soap and water solutions that can't be rinsed properly . . and that slowly penetrate the pores of the floor causing it to wear out long before it naturally should. That's why management chooses the neutral HILLYARD cleaner.

**SUPER SHINE-ALL REQUIRES NO RINSING**

It's a neutral cleaner that chemically dissolves dirt . . leaves no sticky, gummy film or scum . . . eliminates need for rinsing. Cuts labor costs. U/L approved.

HANDLE WITH **HILLYARD** CARE!

WRITE FOR FULL INFORMATION

ST. JOSEPH, MISSOURI U. S. A.

BREVITY—Identify by IEN - 901 if you write the maker

## SWITCH . . Pressure operated to control operation of air compressor

**Source: PRO-TEK-TROL CORP. P. O. Box 32-A, Tipp City, Ohio**

**Pro-tek-trol** trade names new pressure-operated switch, motor-control contactor and stainless-steel unloader valve for automatic operation of a motor-driven air compressor. The switch has sufficient electrical capacity to handle a 5-hp. drive at 220 or 440-volt 2 or 3-phase ac., a 3-hp. drive at 220-volt single-phase ac. or a 2-hp. drive on 220-volt dc. Rating is ¾-hp. on 550-volt dc.

**Pressure connects** at the bottom of the assembly to apply on a diaphragm. This unit opens the switch circuit and also unloads the compressor when predetermined pressure has been developed by the compressor. Reverse action closes the circuit, restarts the motor, closes the unloader when pressure has dropped to the predetermined point. A thermal unit protects against overload. Loss of current from the power source results in unloading and opening of the motor circuit. Housing dimensions including the unloaded valve are 3⅝ by 4¾ by 5⅛ inches. Pressure range is to 200 pounds. Differential is minimum at 5 pounds. Details in 4-page bulletin.

BREVITY—Identify by IEN - 902 if you write the maker

## STEELS . . Design information book on stainless steel as a structural material

Allegheny Ludlum Steel Corp.
2034-38 Oliver Bldg., Pittsburgh 22, Pa.

**Basic properties** of light-gage stainless steel strip and methods for calculating allowable loads from structures employing the material are two principal subjects treated in new book. Title is "Strength of Stainless Steel Structural Members as Function of Design." List of the 172-page book is $5.

**Tension** and compression data are described in an initial chapter. Other chapters cover compression of columns, calculation examples, shear buckling of flat and curved sheets, torsional instability of open section columns. Graphs, sample calculations, references are included.

BREVITY—Identify by IEN - 903 if you write the maker

## HANDLING . . Motor driven cradle takes steel coils for feed to a machine

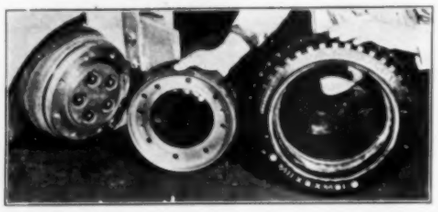
**Source: E. W. BLISS CO. 1418-22 Hastings St., Toledo 7, Ohio**

**A motor** rated at 10 hp. drives two lines of feed rolls in the base of this new cradle. Two circular side-guide plates are mounted on roller bearings and can be adjusted in or out to fit coils that are in various widths to 72 inches. The cradle has capacity for coils weighing to 10 ton and is designed for side entrance of a new coil. The assembly includes a variable-speed transmission for feed speed to 100 fpm. and with a hydraulically-cushioned coil catcher.

BREVITY—Identify by IEN - 904 if you write the maker

## TRUCK . . Demountable cushion tire for use on company's industrial trucks

**Source: CLARK EQUIPMENT CO. Battle Creek 49, Mich.**



**New tire** is made with a tapered hard-rubber base reinforced with bead wires in a design that applies without forcing on a tapered-base wheel. It is secured in place by bolting on the outer portion of the wheel. A set can be placed on a truck equipped with the matching wheels in about 20 minutes. The tire is now standard equipment on the Truck-loader engine-drive fork-lift trucks in Models 1015 and 1024. It is standard also on the Truck-loader Model 1024 and the Clarkette-5 tractor in the company's line.

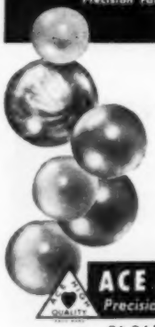
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10*

BREVITY—Identify by IEN - 905 if you write the maker

ACE PLASTIC BALLS *add quality and utility* to hundreds of products

Completely Seamless - Precision Fabricated to order.

ACE PLASTIC BALL employed as valve seating in Foot Valve manufactured by L. R. H. LABAW & CO., Belle Mead, N. J.



- All sizes (¼" to 1¾")
- Variety of plastic materials
- Wide variety of colors

Complete facilities for fabricating plastic parts for all industries. Estimates submitted promptly upon receipt of your blueprints or specifications.

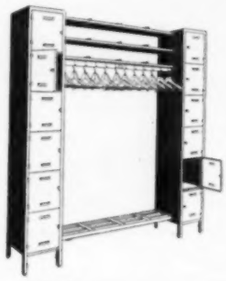
*Write today for Bulletin and Samples.*

**ACE PLASTIC COMPANY**
*Precision Plastic Fabricators and Extruders*
91-24 Van Wyck Blvd., Jamaica 1, N. Y.

BREVITY—Identify by IEN - 906 if you write the maker

**VALET RACKS**

*Lockerette* **KEEPS WRAPS "in press"**



**improves health and morale—lowers absenteeism**

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 6-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

*Write for Bulletin OL-5*

**VOGEL - PETERSON CO.**
624 So. Michigan Ave., Chicago 5, Ill.

BREVITY—Identify by IEN - 907 if you write the maker

How to reduce handling weight . . .

**SAVE HANDLING DOLLARS!**

● One of the surest ways to cut material handling costs is to *move less weight*. Boxes, barrels, cans, trucks, and other receptacles made from Diamond Vulcanized Fibre weigh only 1/16 as much as steel—only ⅕ as much as aluminum! These tough durable receptacles are non-corrosive . . . oil and grease proof. Moreover, they're *guaranteed* not to crack or splinter.

Send in a trial order for one, two, or a dozen Diamond Fibre Receptacles, today. Write for Catalog R-50.

HJ-51

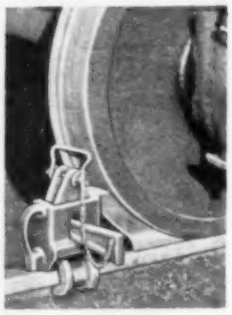
**C-D DIAMOND FIBRE RECEPTACLES**
CONTINENTAL-DIAMOND FIBRE CO. NEWARK 21, DEL.

BREVITY—Identify by IEN - 908 if you write the maker

# HOLD THAT CAR

*with the*

## M & M RAIL CLAMP



USE ON LOADING PLATFORMS. TEMPORARY SIDINGS. CAR FERRIES. TRAVELLING CRANES. CARS ON GRADE. UNDER TIPPLES, STEAM SHOVELS, EXCAVATORS.

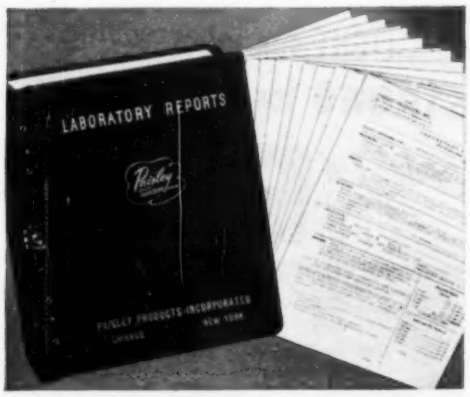
Danger of costly derailments or accidents are reduced to a minimum with the M & M Rail Clamp because *IT WILL NOT SLIP!* It withstands weight of heaviest cars . . . saves time in moving up—no blocks, ties or shims necessary.

The M & M Rail Clamp is a compact, complete unit. Wedge is attached with strong steel chain to clamp. Sturdy handle makes carrying easier. Made in two sizes to fit any rail—worn or new. . . . Model A—40 to 100 lb. rails, Model F—110 to 175 lb. rails.

*Write for further information and prices.*

**SAFETY FIRST SUPPLY COMPANY**
423 Magee Street, Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 909 if you write the maker




## Get these Better Water Resistant Glues that Meet Government Specifications

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Leading users of Adhesives from coast-to-coast depend upon PAISLEY Scientific Service for *all* their civilian and defense needs. They *know* that regardless of serious material shortages, they'll *always* get quick shipment of an Adhesive that will prove satisfactory in every way! Tell us about YOUR needs. Use the convenient coupon below.

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Paisley Products, Inc.
1770 Canalport Ave., Chicago 16

Gentlemen: Send us the Laboratory Reports and Data Sheet indicated below.

- ☐ #676—complies with JAN-P-101, JAN-P-140, and JAN-P-120.
- ☐ #688—complies with JAN-P-101
- ☐ #3020—complies with JAN-P-140
- ☐ #3830—complies with UU-T-81c
- ☐ #3354—complies with JAN-P-133
- ☐ ______ indicate Gov't. Spec. if not shown above.
- ☐ ADHESIVE OPERATION DATA SHEET (You fill in and return for laboratory recommendation.)

COMPANY ____________
ADDRESS ____________
BUYER'S NAME ____________

**PAISLEY PRODUCTS INCORPORATED**
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. • PHONE CANAL 6-2219
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BREVITY—Identify by IEN - 911 if you write the maker

## JACK . . Wheel mounted hydraulic, motor vehicle type, has 10 ton rating

**Source:** R. V. JACK CORP.
Park & Graham Sts., Arcade, N. Y.

**The load arm** in this new Model J-20 10-ton jack hinges upward to raise the load plate from 5½ in. above the floor in lowered position to a maximum of 22½ inches. Lift action is by operating the combination pumping and steering handle. A by-pass protects the hydraulic equipment against overload. Release controls for lowering are positive acting.

**The jack** is mounted on two double-wheel casters and on three roller-bearing front-end wheels. It weighs 300 pounds. Dimensions are 52 by 12¾ in. in length and width not counting the handle. Design features include a honed power cylinder, high and low-speed pumping pistons, oil-flushing arrangement that cleans the valve seat each time the load arm is lowered during jack operation.

BREVITY—Identify by IEN - 912 if you write the maker

## CALCULATING . . Flow reading adapter for first aid use on oxygen regulator

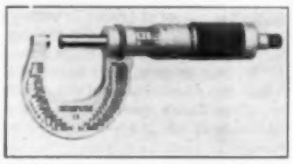
**Source:** LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

**Linde L-26** is a new adapter fitting carrying the equivalents marked on one of its faces in liters per minute of flow for given oxygen pressures. The adapter applies on the delivery outlet from a regulator employed normally for industrial uses to administer first-aid oxygen. Length of the unit is about 4 inches. Finish is in brushed chromium.

BREVITY—Identify by IEN - 913 if you write the maker

## GAGE . . Micrometer caliper, carbide faced, ½ to 12 inch sizes

**Source:** BROWN & SHARPE MFG. CO.
235 Promenade St., Providence 1, R. I.



**Carbide** is employed on the faces of anvil and spindle in this new outside micrometer caliper. Spindle and screw are one piece of stainless steel with hardened and ground threads. The threads ride in a sliding taper adjustment. The thimble adjusts longitudinally on the screw and then locks to it. Finish is in dull chrome. Graduations are black on the chrome surface.

**The new design** is available in a range of work capacities starting at 0 to ½ in., or the metric equivalent, and extending to maximum reading of 12 inches. Graduations are in thousandths of an inch or hundredths of a millimeter. All are listed in a new 12-page pocket booklet, "Completely New Brown & Sharpe Micrometers."

BREVITY—Identify by IEN - 914 if you write the maker

## WATER TREATING . . Demineralizer has rated flow capacity to 10 gph.

**Source:** PENFIELD MFG. CO.
17-21 High School Ave., Meriden, Conn.

**List price** is $75 for this new permanent-cartridge demineralizer with which the equivalent of distilled water can be produced on connection to a city-water faucet. The unit assembles on a wall or other suitable vertical support and connects to the faucet at its bottom. Connection is made also to a 110-volt ac. outlet to operate a conductivity indicator to show quality of the treated water and to tell when the resin requires changing.

**Construction** is characterized by the permanent cartridge which is supplied full of the company's Penex mixed bed resins. This cartridge is removed and dumped when the indicator shows the need for replacement. It is then refilled with a fresh supply of the resins and is replaced in the housing.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30*

BREVITY—Identify by IEN - 915 if you write the maker

## SYNTRON PARTS FEEDERS

PROVIDE AN ECONOMICAL ANSWER TO THE FEEDING OF PARTS

HERE'S HOW two Feeders solved the problem of feeding screws on a combination counting and packaging machine.

Small, medium or large parts of various shapes and materials . . . Syntron Parts Feeders will feed them single file . . . in oriented position . . . at variable rates . . . and without damage . . . to grinders and presses, inspection and counting and packaging devices, and other automatic processing equipment.

Operates by controlled vibration—no motors, gears, cams, belts or other wearing parts to require expensive maintenance. Units are also very compact.

Catalog data upon request. Or send details of your problem along with sample parts to . .

**SYNTRON CO.**
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 916 if you write the maker

BREVITY—Identify by IEN - 917 if you write the maker

**INVESTIGATE "BEAR" SIMPLICITY** and how it helps you eliminate noise and vibration in rotating parts *quickly, accurately* and *economically* . . . how it reduces wear of valuable machinery and improves performance of your finished products. "Bear" Dy-Namic Balancing Machines have simple micro-meter controls, direct-reading dials and adjustable supports to give you maximum control of balance.

**FREE** *Dy-Namic Balancing Manual* brings you information on latest Dy-Namic Balancing developments! *Write:*

BEAR MANUFACTURING CO.
Dept. I-5, Rock Island, Ill.

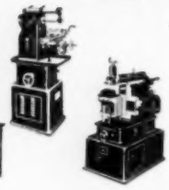
**"BEAR"**
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 918 If you write the maker

Replace for PROFIT with SHELDON Precision Lathes

The great bulk of everyday tool room jobs come within the capacity of Sheldon Precision Lathes—can be done with equal accuracy, at lower tool cost, lower power cost, in less time, and at greater profit on a Sheldon than it can on many of the costly, cumbersome, space-wasting older lathes found in most shops.

These extremly accurate (Zero Precision Taper Roller Bearings), large capacity for size (1⅝" hole thru spindle), light, fast, easy to operate, space-saving, moderate priced lathes will turn out not only more pieces per dollar, but on many jobs, more pieces per hour, than most older large lathes. When figuring replacement of obsolete equipment, remember you can have two or more of these efficient little money makers for the tool investment you made for the large lathe you are replacing.



Write for Catalog

SHELDON CHICAGO

SHELDON MACHINE CO., INC., 4208 N. Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 919 If you write the maker

LESS DOWN TIME, MORE PRODUCTION FROM PUNCH PRESSES FED BY

LITTELL DOUBLE AUTOMATIC CENTERING REELS

Vital minutes are saved, with practically no down time for coil replacement, when a Littell Double Reel uncoils stock to the punch press. The idle side of the reel is loaded while the other side pays out. When a coil is used up, the operator simply lifts the hub lock pin, then swivels the reel 180°, thus placing the reserve coil in press feeding position. The changeover is complete in a few seconds. Like Littell Single Reels, Littell Double Reels combine balance that means smooth running accuracy with rugged malleable iron and steel construction that assures year in, year out dependability.

FOUR SIZES
No. 3 . . . for coils up to 300 lbs.
No. 5* . . . for coils up to 600 lbs.
No. 10* . . . for coils up to 1,000 lbs.
No. 25* . . . for coils up to 2,500 lbs.
*Can be furnished with motor drive

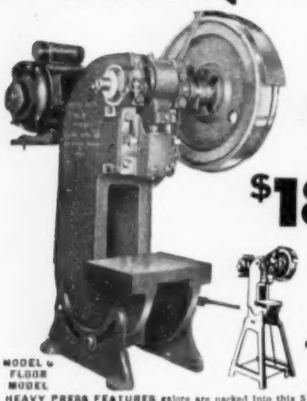
Write for catalog

F. J. LITTELL MACHINE CO.
ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES
4133 N. RAVENSWOOD AVE. • CHICAGO 13, ILL.

BREVITY—Identify by IEN - 920 If you write the maker

PRESS-RITE MODEL O OPEN BACK INCLINABLE

HEAVY DUTY POWER PRESS



5 TON ONLY $187.50 F.O.B. St. Paul, Minn. with Standard Equipment less electric motor.

MODEL O FLOOR MODEL

MODEL O BENCH MODEL

HEAVY PRESS FEATURES galore are packed into this 5 ton press . . . the non-repeat single stroke safety mechanism, 4 point sliding key clutch*, anti-friction roller bearings in flywheel*, and automatic cam actuated brake* just to mention a few. The PRESS-RITE MODEL O challenges comparison. Feature for feature it outclasses any other press of its size on the market. It is open backed and inclinable just like the heavier PRESS-RITE PRESSES.

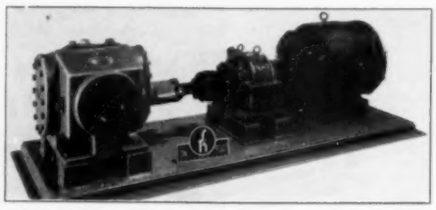
*Optional at extra cost. WRITE TODAY FOR BULLETIN 3481

Sales Service Machine Tool Co.
2365 UNIVERSITY AVENUE
ST. PAUL 14, MINNESOTA

BREVITY—Identify by IEN - 921 If you write the maker

PUMP . . Rotary gear design, steam jacketed for viscous liquids

Source: SCHUTTE & KOERTING CO.
1257 N. 12th St., Philadelphia 22, Pa.



**Steam jacketed** design has been added to the company's standard herringbone-gear pump to handle viscous liquids such as road oil at high temperature. Inlet, outlet and cover flanges are cast integral with the base. Shaft deflection is prevented by straight bored housing. The shaft is alloy steel.

**Bearings** are bronze. The rotor gears are case hardened and pressed and keyed on the shafts. The rotor and bearing assembly is removable as a unit.

**The pump** can be specified in Meehanite metal, cast steel, bronze or special alloy. Standard sizes are from ½ to 8 inches. Rating is to 1,000 gpm. with pressure to 500 pounds.

BREVITY—Identify by IEN - 922 If you write the maker

STEELS . . Corrosion data on carbon and stainless steel in chart

Cooper Alloy Foundry Co.
212 Bloy St., Hillside 5, N. J.

**Acetaldehyde** to Zinc Sulphate is the range of materials tabulated in new 4-page "Materials Selection Chart". Relative corrosion resistance is shown against these materials under some 350 conditions for carbon steel, three of the company's stainless steels, other corrosion-resistant alloys.

BREVITY—Identify by IEN - 923 If you write the maker

COMMUNICATING . . Transceiver serves as portable headquarters station

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden, N. J.

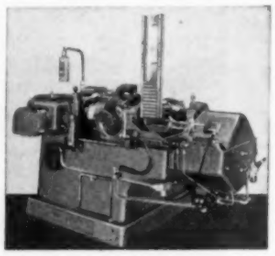
**Carfone** station unit 15 is a new portable assembly of radio transmitter and receiver in a metal housing that measures 20 by by 11 in. and weighs 44 pounds. It has been designed as a portable headquarters unit for a fleet of trucks or vehicles in installation where the central location will change from time to time. It is suited also for small installations where expensive permanent equipment is not justified. Operation is on 110-volt 60-cycle ac. Power output is 15 watts.

**The front panel** and the antenna connection are recessed into the housing. The loudspeaker assembles in the housing back of a central grille. At the left is a compartment to carry the microphone, power cord and antenna. A new circuit on the transmitter side provides for accurate modulation. There is sufficient selectivity to eliminate unwanted adjacent-channel signals. Operation is in the 152-175 megacycle bands.

BREVITY—Identify by IEN - 924 If you write the maker

THREADING . . Pipe nipple machine two sizes cover ½ to 2 in. nipples

Source: LANDIS MACHINE CO.
1 Wayne Ave., Waynesboro, Pa.



**Landmaco No. 2** is a new magazine-feed automatic machine to thread one end of a pipe nipple then to turn it and thread the other. One assembly threads standard long nipples to 6 in. in length. Another is for close, short and special - short nipples. Each is in two sizes for ½ and 1-in. work. The smaller can be supplied with auxiliary equipment for ¾-in. work also. The larger takes auxiliary equipment for 1¼, 1½ and 2-in. work.

**Nipples** cut to correct length are positioned in the feed magazine by the operator and the machine takes over from there. It threads, chamfers, reams one end, then opens for a transfer mechanism which positions the work, after turning it end for end, to thread, chamfer, ream and discharge. Production rates 625 pieces per hr. for ½-in. nipples, 193 per hr. for 2-in. units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 925 If you write the maker

POWER IN MARKING TO LIFT A HOUSE

The Screw Pressure Principle of the ACROMARKER NAME PLATE AND PARTS STAMPING MACHINE makes it adaptable to stamping steel and all other metals and materials.

ASK FOR PRICES AND LITERATURE

The ACROMARK Company
7 MORRELL ST., ELIZABETH 4, N. J.
"THE ORIGINAL MARKING SPECIALISTS"

BREVITY—Identify by IEN - 926 If you write the maker

LIGHT for labor-saving . . . STRONG for safety!

MAGNESIUM LADDERS

One man can carry the largest size!

Single ladder with 1¼" x 1" half-round rungs. Nine sizes. 4' to 20'.

Step ladder weighs much less than wood ladder. Five sizes — 4' to 10'.

Figure your savings in man hours...and reduced accident hazards. Magnesium ladders weigh less than wood. This means easy handling. Designed for *lasting* service.

Single ladders are available in nine sizes—4' to 20'... Extension ladders in sizes from 16' to 40'. Both types are made with 1¼" x 3⅛" semi-channeled side rails, and equipped with rubber grip safety ladder feet.

Extension ladder with automatic spring type locks.

See how others save time and money with magnesium ladders; write for Bulletin L-70.

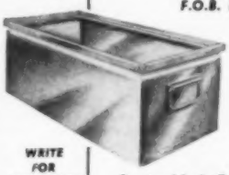
Ladders and Scaffolds for Any Purpose—Any Place—Any Time

GOLD MEDAL LADDERS SCAFFOLDING
for Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc.
38-21 12th Street, Dept. I.E., Long Island City 1, New York
See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 928 if you write the maker


## BAY STACKING BOXES

ALL PRICES F.O.B. FACTORY



SPECIAL FEATURES

Reinforced Corners • Drop Handle Each End • Spotwelded Construction • Four Rivets For Extra Strength • Continuous Stacking Rim All Four Sides

WRITE FOR CATALOGUE

| Product Number | Width | Length | Height | Gauge Steel | Price Green | Price Plain |
|---|---|---|---|---|---|---|
| 801D-18 | 10" | 16" | 6" | 18 | $2.05 | $1.80 |

Prices Subject to Change

PHONE • WIRE • WRITE

Phone: BAldwin 9-1805

**BAY METAL PRODUCTS**

3801 N. 16th St. Philadelphia 32, Pa.


BREVITY—Identify by IEN - 929 if you write the maker


## Flexible Plastic Tubing

Alanol flexible plastic tubing is tough, transparent, chemically inert. You can use it for alcohol, beverages, corrosive chemicals, food products, oils, water, and sterilize it with steam. It is made of Vinyl Chloride Compound, is stocked in 37 sizes from .120 to 1 inch i.d., .170 to 1⅜ inches o.d. Temperature range is minus 35 to plus 190 degrees F. List price per 100 feet is $3.78 to $141.02. (Subject to quantity discounts.)

Ask for free 2-inch sample of the tubing and a copy of our technical data sheet which includes a table of corrosion resistance on 48 chemicals.

**Couse & Bolten Co.**

40-46 Lafayette Street Newark 2, N. J.


BREVITY—Identify by IEN - 930 if you write the maker


## CUT ABSENTEEISM from COLDS, SICKNESS

Glycolator

CONTROL OF AIR-BORNE VIRUS AND BACTERIA

Costs only pennies per day

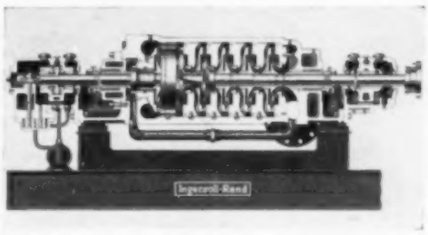
Kill the cause of respiratory ailments and you reduce lost time. GLYCOLATOR method reduces air-borne germs to a safe level even in heavily occupied rooms with odorless vapors of triethylene glycol. Regal GLYCOLATOR shown treats 100,000 cu. ft. of air per hour. Low initial cost, operates for pennies per day. Other sizes for all types of conditions. For specific information . . .

WRITE Glycolator DIVISION
IRON CITY CHEMICAL COMPANY
Valencia, Penna.


BREVITY—Identify by IEN - 931 if you write the maker

## PUMP . . Multistage centrifugal rates to 1,600 gpm. and 1,200 pounds

**Source: INGERSOLL-RAND CO.**
**746 Morris Ave., Phillipsburg, N. J.**




**The housing** of this new Class-HMTA centrifugal pump is made of cast iron or steel and is smooth cylindrical bore. It takes a shaft-mounted assembly of stationary channel rings and rotating impellers in which single-suction impellers are keyed to the shaft and positioned axially by split rings and spacing sleeves. The channel rings are prevented from turning by pins engaging holes in the housing and are sealed by rings in machined grooves. The complete assembly can be lifted out of the housing after removing the bolted top half.

**Axial thrust** is counteracted by a hydraulic balancing drum accessible through the discharge stuffing-box extension. By-pass piping to the suction from the drum assembly places the stuffing box under suction pressure. Sleeve or ball bearings can be specified for combinations of thrust and radial load. Provision is made for longitudinal expansion when the pump is to operate at temperature above 250 deg. F. The pump is available in three, four, five and six-inch sizes with three to nine stages.

**Bulletin** 7233, 16 pages, presents illustrated description covering design, operation and construction features.

BREVITY—Identify by IEN - 932 if you write the maker

## TIMING . . Interval unit with motor drive and knob adjustment

**Source: HAYDON MFG. CO.**
**243-47 E. Elm St., Torrington, Conn.**

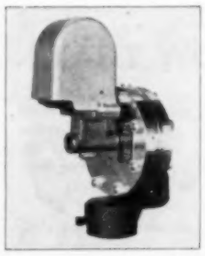
**Series 8006** is a recently improved design in the company's line of adjustable interval timers for circuit closing and opening on electrical rating to 28 amp. at 220-volt ac. Improvements center in a new friction mechanism for smooth adjustment and in protection against extremes of heat and moisture.

**Standard intervals,** available from stock, are 1, 15, 60 and 180 minutes. Others from 5 min. to 60 days can be specified. A "hold" action can be supplied for battery-charger use. The interval can be set by turning the adjusting knob in either direction. No lubrication is required. Installation can be made in any position required by equipment design.

BREVITY—Identify by IEN - 933 if you write the maker

## CONTROL . . Pneumatic transmitter is actuated by differential pressure

**Source: FOXBORO CO.**
**42 Neponset Ave., Foxboro, Mass.**



**New d/p Cell** designates a pneumatic transmitter that takes 20-lb. air from a pressure source and controls its flow to pneumatic indicating, recording and control instruments to regulate liquid level and other conditions involving differential pressure such as flow through a pipe line. The base casting provides a means for mounting adjacent to the condition to be controlled. Pipe connections on the two sides of the central bolted housing are completed to the high and low sides of the differential pressure. Two air line connections are side by side in the rear of the top housing for air supply and flow of controlled air pressure from the unit.

**The high and low pressures** pass into the central housing through stainless-steel filter discs to apply on opposite sides of a diaphragm. Any unbalance results in a force applied on a bar fulcrumed in a flexure tube to control position of a flapper in relation to an air nozzle. This alters pressure in a balancing bellows, the output from which is transmitted to the control instruments.

**Three types** provide two ranges each. These are maximum at 0 to 25 in. of differential pressure to a maximum at 0 to 800 inches. Maximum working pressures are 750 to 4,000 pounds. Maximum temperature is 250 deg. F. Transmitted control pressure is 5 to 15 pounds. The 0 to 25-in. unit illustrated measures 7 in. in body diameter. Illustrated details in 16-page Bulletin 420-1, available upon request.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 934 if you write the maker

## No more bulky splices - with POLYKEN Nº 163

The splicing application shown above is one of many places where the revolutionary new electrical tape, *Polyken* No. 163, does a better job than old-fashioned friction tape. Less bulky. Sticks to any surface as well as itself. More moisture resistant. Easier, cleaner to handle. And *costs less*.

Ask your Polyken distributor or write for free folder, "See for Yourself!" Address *Polyken*, Dept. IEA, 222 W. Adams St., Chicago 6.

ONE OF THE NEW . . .

**Polyken® ELECTRICAL TAPES**

TAILORED TO YOUR JOB

POLYKEN Industrial Tape, Department of Bauer & Black, Division of The Kendall Company


BREVITY—Identify by IEN - 935 if you write the maker


New ZIP-GRIP® Self-Locking SET SCREWS used on a new Nationally Known Washing Machine!

A puzzling set screw problem on a new nationally known Washing Machine was successfully solved with ZIP-GRIP® Self-Locking Set Screws. In less than a year, over 100 manufacturers have adopted ZIP-GRIP® for the same reason. Perhaps ZIP-GRIP® is the answer to your puzzling set screw problems, too.

Send for Free ZIP-GRIP® Action Demonstrator that shows exclusive, Contra-Thrust Action; we'll also include ZIP-GRIP® Data Sheet and tell you how to get Free Engineering Test Samples. Write today.

*PAT. PENDING

Makers of SETKO SET SCREWS

**Set Screw & Mfg. Co.**

5 Main St. Bartlett, Ill. (Chicago suburb)

*We specialize in Solving Puzzling Set Screw Problems.*


BREVITY—Identify by IEN - 936 if you write the maker


## Know the scope of the MARSH line of pressure gauges

There are literally thousands of combinations of types, ranges, case styles and connections in the broad Marsh line of pressure, vacuum and compound gauges. As a result, gauge requirements that would be "special" to others are often standard to Marsh.

This means that we can meet your gauge needs better and more economically . . . whatever the service condition, quantity or design requirement. To know the scope of Marsh Instruments just ask for the new fact-filled catalog.

**MARSH INSTRUMENT CO.**

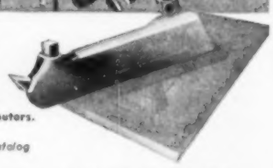
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 155 E. 44th St., New York 17, N. Y.

BREVITY—Identify by IEN - 937 if you write the maker

# ARMSTRONG

Every tool shown represents a full line of quality tools, known the world over as the finest of its type.

Armstrong Tools are stocked by Industrial Distributors.



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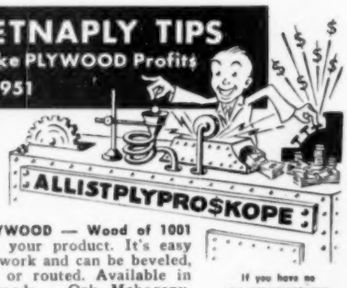
**ARMSTRONG BROS. TOOL CO.**
"The Tool Holder People"
5243 W. Armstrong Ave., Chicago 30, U. S. A.
New York San Francisco

BREVITY—Identify by IEN - 938 if you write the maker

## AETNAPLY TIPS to make PLYWOOD Profits in 1951




If you have no ALLISTPLYPROSKOPE — use AETNAPLY Tips.

1 **Use PLYWOOD — Wood of 1001 Uses** in your product. It's easy to cut, work and can be beveled, shaped, or routed. Available in many woods — Oak, Mahogany, Birch, Walnut, Pine, Gum, Fir and others.

2 **Save labor with plywood's** large size panels, smoothly sanded surface, ready to finish. Let Aetna's Engineering Department help solve your production problems free of charge.

3 **Buy plywood from a reliable,** steady source—Aetna Plywood & Veneer Company. Use Aetna's 4 warehouses or direct mill shipping services.

**NEED PLYWOOD?** Aetna may have just what you want — send in your inquiries now.

**AETNA PLYWOOD & VENEER CO.**
1724 N. Elston Ave. Chicago 22, Illinois
ARmitage 6-7100 Teletype: CG305

BRANCH WAREHOUSES: Grand Rapids, Indianapolis, Rockford, Ill. SALES OFFICES: Detroit; Milwaukee and Green Bay, Wis.; Minneapolis; Virginia Beach, Va.; Springfield, Ill.; Marion and West Lafayette, Ind.

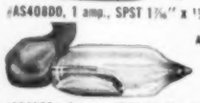
BREVITY—Identify by IEN - 939 if you write the maker

## HONEYWELL MERCURY SWITCH PRICES ARE DOWN!

ACTUAL SIZE

#AS4080D, 1 amp., SPST 1⅞" x 1½" . . . $0.125

ACTUAL SIZE



#AS4080D1, 1 amp., SPST 1⅞" x 1½" . . . $0.175

Prices are net to manufacturers for quantities of 100 and up. Type number ending in "0" is without leads . . . number ending in "1" includes 7-inch, double cotton covered, extra flexible leads.

Write for complete engineering specifications . . . or for immediate action, call the Honeywell branch office nearest you.

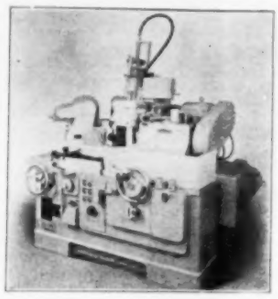
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell
MERCURY SWITCHES

BREVITY—Identify by IEN - 940 if you write the maker

## GRINDING . . Semi-automatic machine for gasoline engine valves to 3½ in.

**Source: NORTON CO.**
**36 New Bond St., Worcester 6, Mass.**



**The operator** of this new machine positions a valve to be ground in the workhead collet chuck and moves a lever. The machine then clamps the work, starts the grinding cycle and coolant flow. It cycles through rough and fine finish feed in connection with spindle reciprocation to a stopping point determined by an electric timer. At this point the coolant is shut off, wheel and work rotation stop and the work is released for replacement by the next piece.

**The collet chuck** in the workhead is operated by hydraulic pressure. A radially adjustable faceplate centralizes the work in the chuck with reference to the spindle center. End stops locate the grind surface with the wheel. The head swivels through 76 deg. on a plate mounted on a sliding table. Movement into grinding position or away for wheel removal is accomplished by turning a handwheel. A wheel-guard truing device operates by hydraulic pressure and operator actuation of a lever. The machine takes valves with stem diameter to ¾ inch. Face diameter can range from 7/16 to 3½ inches. Face angle is 0 to 62½ degrees.

BREVITY—Identify by IEN - 941 if you write the maker

## HEAT TREATING . . Induction machine for through or contour gear hardening

**Source: WESTINGHOUSE ELECTRIC CORP.**
**511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.**

**Inductall** trade names new induction heating and quenching equipment with automatic cycle control and power input for both through and contour hardening of single or cluster gears, ring type parts, shafts. The equipment applies singly or in multiples to groups of six in connection with a 150-kw. 10,000-cycle motor-generator set for through or depth heating and a 200-kv. 200,000-cycle electronic generator for contour or surface heating. Primarily the equipment is designed for production line application on long runs of gears.

**The work** is placed manually or is magazine fed and the machine carries it through a cycle that includes preheat with the 10,000-cycle power, soak, contour-heat with the 200,000 cycle power, quench and unload. If through hardening is desired the soak and 200,000-cycle heat are omitted. Two or more machines are employed on cluster gears, one for each gear size. Each machine, not including the power units, occupies a floor space that measures about 4 by 6 feet. Weight is 2,500 pounds.

**Bulletin B-5259,** 4 pages, presents illustrated description of the equipment, its production capacities, space requirements.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 942 if you write the maker

## DID YOU KNOW THAT . . .

**$125.00** buys one of these one-ninth page units of advertising space where a factual description of your products will be seen by . . .

**61,347** . . . engineering, operating and production men in all industries . . .

**86.1%** . . . in plants rated at $100,000 and over and . . .

**96.2%** . . . of them indicated as most likely to see your advertisement when they check Industrial Equipment News for product news and information and to look for their current requirements.

**Good for selling . . . because . . . used for buying**

*DETAILS?* Ask for "The IEN Plan"

The Original IEN FOUNDED 1933

**INDUSTRIAL EQUIPMENT NEWS**
THOMAS PUBLISHING COMPANY
461 EIGHTH AVENUE NEW YORK 1, N. Y.

BREVITY—Identify by IEN - 943 if you write the maker

## "NATIONAL"
### Self Lubricating Bronze Bearings
*Molded to Your Accurate Specifications*

Our "DUCTILOY" bearings are made from a unique powder formula, perfected by "National" Engineers, that result in a bearing with properties possessed by no other bearing on the market. Our special alloy makes these bearings highly ductile and eliminates waste due to breakage at installation or from rough handling.

We are also very proud of our line of spherical bearings and of our hard won reputation for the delivery of intricate powdered metal parts, heretofore considered impossible to produce.

Applicable to all medium and light weight service, such as Automobile, Electrical Appliances, Farm Equipment, Domestic Appliances, such as Sweepers, Refrigerators, Washers, Portable Electric Tools, etc., and Industrial Machinery.

**LET US HELP SOLVE YOUR BEARING, BUSHING AND SHAFT SEALING PROBLEMS**

*We are equipped to handle your requirements in any quantity.*

**NATIONAL MOLDED PRODUCTS, INC.**
*Manufacturers of*
**Sintroy, Ductiloy and Tubeloy Bearings**
1945 MILL STREET • ST. MARYS, PA.

BREVITY—Identify by IEN - 944 if you write the maker

# Announcing SIMPLEX Re-Mo-Trol

**A Complete New Line of Hydraulic Pumps and Remote Controlled Rams (10 to 100 TONS CAPACITY)**

Pulling valve seats with Re-Mo-Trol. "Center Hole" gives positive, torque-free pull . . . minimizes need for special attachments on many jobs.

## Hundreds of Uses in Industry!

It's the new "jack-of-all-trades" that is *master* of them all—SIMPLEX Re-Mo-Trol—the latest addition to the world's best known family of industrial jacks! Makes all lifting, pulling or pushing jobs easier. Remote control assures new safety . . . does many jobs impossible with self-contained jacks or pullers.

Re-Mo-Trol applies oil-smooth hydraulic force in any direction—up, down, sideways or at any angle. Solid or "Center Hole" Rams.* Light in weight—easily portable, it is ideal for shop or field use.

Order today from your Simplex Distributor or write direct for Bulletin: Hydraulic No. 50.

*On rams of 30 tons or greater capacity

Simplex LEVER • SCREW • HYDRAULIC Jacks

**TEMPLETON, KENLY & CO.**
1012 S. Central Ave. • Chicago 44, Illinois

BREVITY—Identify by IEN - 946 If you write the maker

So Simple Anyone can

ENGRAVE on Plastic and Metal

new hermes Engravograph

- Multiratio Tracing Arm. Engraves more than 15 sizes from ONE template.
- Covers a larger engraving area than any other portable unit of it's kind.
- Ideal for any lettering.

Send for Booklet Model 1M

NEW HERMES, INC.
Dept. No. 23
13-19 UNIVERSITY PL. N.Y. 3, N.Y.

BREVITY—Identify by IEN - 947 If you write the maker

LINEMASTER
Treadlite

revolutionary new foot switch

SMALL
LIGHTWEIGHT
EFFICIENT

Head your new product planning with Linemaster's compact, versatile, *new* TREADLITE foot switch . . . and add good looks and increased operating efficiency at amazingly low cost! TREADLITE's precision engineering gives you *two* accurate switching operations activated by *one* treadle** . . . housed in a smartly designed casing little larger than a pack of cigarettes. Put TREADLITE at the *top* of your specifications—for equipment modern from the *bottom* up!

3½" LONG 2⅛" WIDE 1" HIGH

*T-52S Two single pole, double throw, switches, operated by one treadle, momentary contact only ..... $4.20 *without cord*

T-51S Single pole, double throw, momentary contact only ..... $2.95 without cord*
*Cordsets available

Both models have heavy rubber tread, slip-proof cork and rubber base, and casings of formed steel with black crackle finish. Angle of treadle and light pressure required insure comfort and prevent fatigue of operator.

*Another Outstanding Product by*
LINEMASTER, THE LEADER

Write for complete information or a quotation on your special foot switch requirements. Over 20 different models to choose from.

LINEMASTER *the leader*

SIMONDS MACHINE CO., INC.
50 SAXON ROAD • SOUTHBRIDGE, MASS.

BREVITY—Identify by IEN - 949 If you write the maker

## COOLING . . Fan equipped coil for jacket water and process liquids

**Source: MARLEY CO.**
**3003 Fairfax Road, Kansas City 15, Kansas**

**Three new models** have been added to the company's Dri-Cooler line of frame mounted fan equipped copper cooling coils. Two, including Model M and Model JJ have horizontal assembly with the fan delivering vertically from below. The third, Model L, mounts the coil vertically for horizontal fan action. Model L and Model M are identical in rating in seven sizes.

**Capacity** ranges from 41 to 203 gpm. based on water to be cooled through 10 deg. F. from 170 deg. F. with dry-bulb temperature at 90 deg. F. Motor rating is ½ to 4½ hp. The fan diameter is 36 to 60 inches.

**Model JJ** is built in four sizes with capacity at 214 to 503 gpm. on the same basis as the other two. It employs a 3 to 11-hp. motor to drive a fan measuring 60 to 96 in. in diameter. This unit and the others in the line mount coils made of ⅝-in. seamless copper with pressure-bonded helical-wound aluminum fins. The housings are made of structural steel with one coat of shop-applied rust-resistant paint.

**Bulletin DC-50**, presents illustration description with dimension data and specifications on five types of fan-equipped cooling coil for jacket water and for process liquids.

BREVITY—Identify by IEN - 950 If you write the maker

## SOLDERING . . Pocket instruction booklet on care and use of electric soldering tools

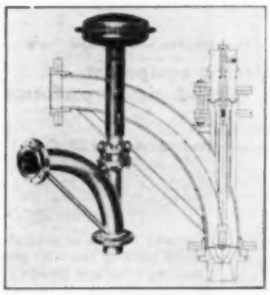
Weller Electric Corp.
806-10 Packer St., Easton, Pa.

**New edition** of "Soldering Tips" is a 24-page pocket booklet that lists at 10 cents. Line drawings and text describe how to select and apply flux, how to tin a surface, how to apply solder, as 15 rules. Tool care is summarized in 7 rules.

BREVITY—Identify by IEN - 951 If you write the maker

## VALVE . . Diaphragm operated for shut off, minimum turbulence

**Source: HAMMEL-DAHL CO.**
**241-5 Richmond St., Providence 3, R. I.**



**Long Sweep** designates new plug-type shut-off valve in which the body is a curved section of the same pipe as that in the line to be controlled. The stem enters through a long guide to take the plug at one end and the operating diaphragm assembly at the other. The seat is a machined venturi-flow element that clamps between the valve face and the line pipe. Passage is maximum at one-half the pipe area.

**Sizes** range from 2 to 6 inches. The operating spring pressure is standard at 3 to 15 pounds. Plug lift is one-half the valve size. Materials are to specification.

BREVITY—Identify by IEN - 952 If you write the maker

## SIGNALING . . Photoelectric indicator reads smoke density in flue to chimney

**Source: COMBUSTION CONTROL CORP.**
**75-79 Broadway, Cambridge 42, Mass.**

**New indicator** and the required control equipment to read and signal smoke density is shown in the illustration. It applies with a light-source unit and a photoelectric cell that mount on opposite sides of a flue to observe the interior and each other through openings in the flue wall. These two units can be placed a maximum of 20 ft. apart.

**Operation** is on 110 or 220-volt 50/60-cycle ac. The indicator shows smoke density on a scale. Red and green signal lamps in the housing light when the density is excessive or as it should be. An audible alarm can be set to sound at a desired reading to warn of abnormal conditions.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 953 If you write the maker

INCREASE PRODUCTION WITH A *Royal* 515 STOOL

60 DAY Free TRIAL
examine it . . . test it . . . use it without obligation

- Sturdy Masonite seat imbedded in the seat pan.
- All welded frame.
- Leg extension for easy height adjustment.
- Oven-baked gray enamel finish.
- Fully guaranteed.

WRITE TODAY FOR DETAILS!

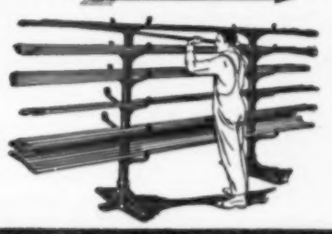
ROYAL METAL MFG. CO.
175 N. MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

BREVITY—Identify by IEN - 954 If you write the maker

SPEEDS UP STOCK-ROOM SERVICE

The BROWN TIME-SAVING RACK saves the time previously lost end-hauling each bar of stock its entire length from the old-style, closed-side Rack, the Brown Rack requiring but a few inches of side movement. Each length, width and thickness of stock is displayed in goldfish visibility for instant selection. Workmen waiting for stock are served without waste of time, and returned to their production machines to turn out a maximum of output. Any time you require additional storage space, all you need do is to add more units. If you want to relocate it at any time, you can do so for it is unattached to the building. It is a simple, durable article made of metal in five styles. It can't burn, warp, sag or twist; depreciation is practically nil. SEND FOR BULLETIN No. 26-E DESCRIBING

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH THIRD STREET READING, PENNA.

BREVITY—Identify by IEN - 955 If you write the maker

ITS ANGLE NOSE IS STRONGER

The angle-form, ribbed nose of the "HALLOWELL" *UNI-TRUK* is made of heavy pressed steel. *Triple-welded to frame*, it gives extra strength at points of greatest stress.

The light weight *UNI-TRUK* handles all but the heaviest hand truck jobs, gets more work done *faster*. One and two-handle models. Stair-climbers available.

*Send for Form 718-2*

"TRY ONE AND YOU WILL BUY MORE!"

HALLOWELL
MATERIALS HANDLING EQUIPMENT

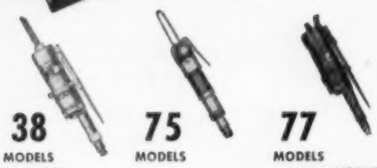
SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 956 If you write the maker

GET THE Thor STORY

ON PORTABLE POWER

SCREW DRIVERS



38 MODELS UNIVERSAL ELECTRIC CATALOG E-2

75 MODELS PNEUMATIC CATALOG P.1

77 MODELS HIGH-FREQUENCY ELECTRIC CATALOG 61

A SIZE AND TYPE FOR EVERY USER

Belt Sanders
Bench Grinders
Drills
Grinders
Hammers
Impact Wrenches

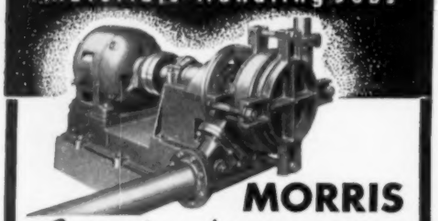
Thor PORTABLE POWER TOOLS

Nibblers
Nut Setters
Polishers
Sanders
Saws
Screwdrivers

INDEPENDENT PNEUMATIC TOOL CO., AURORA, ILL.

BREVITY—Identify by IEN - 957 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs



MORRIS Centrifugal SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

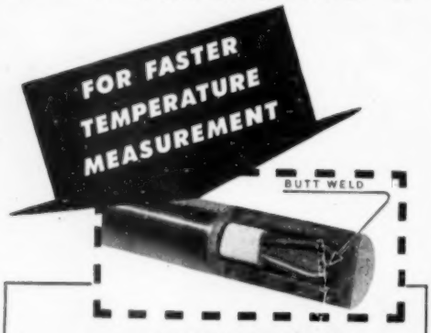
Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 958 If you write the maker

FOR FASTER TEMPERATURE MEASUREMENT




NEW BROWN Fast-Speed Thermocouple IS FASTER BECAUSE:

(1) Butt-welding eliminates mass of metal at hot junction; (2) Shape of wire adjacent to junction holds back insulator, prevents it from dissipating heat and affecting response of the thermocouple.

Depending upon the application, this *Fast-Speed Thermocouple* is 1½ to 9 times faster than conventional type thermocouples.

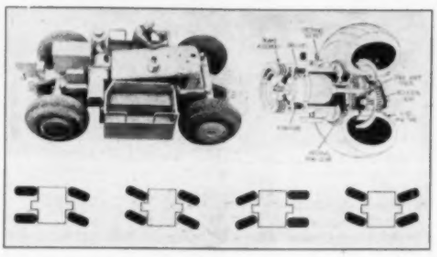
Call in your local Honeywell Supplies Man and learn about the HSM Plan for new convenience and economy in all of your pyrometer supplies purchasing. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Phila. 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell BROWN INSTRUMENTS

BREVITY—Identify by IEN - 959 If you write the maker

## CONSTRUCTION . . Electric tractor, engine drive for earth moving equipment

**Source:** R. G. LeTOURNEAU INC.
2303 N. Adams St., Peoria, Ill.



**Tournatow** is a new diesel-electric tractor in the company's lines of earth-moving equipment. It mounts a 186-hp. diesel engine with direct connection to an ac. generator for power steering and for operation of a load winch. Also on the drive is a dc. generator to provide current to the four dc. travel motors mounted individually with gear reduction in the four wheels.

**Control** centers at an instrument panel in front of the operator for movement forward or in reverse, for brake-applied holding and operation of the winch, for steering to turn a circle with the back wheels, the front wheels or both and to move to one side or the other at an angle.

**Travel speed** is infinitely variable to 25 mph. Turning radius is a little under 14 feet. Overall dimensions are about 17 by 8½ by 6 ft. without a cab, 7½ ft. when it is included. Weight of the new tractor is 23,000 pounds.

BREVITY—Identify by IEN - 960 If you write the maker

## STEEL . . Hot working material for tools in drop forging operations

**Source:** HEPPENSTALL CO.
4618-22 Hatfield St., Pittsburgh 1, Pa.

**Solid and insert dies and punches**

**Prestem** is a new hot-working die steel that is able to minimize heat checking and at the same time will resist the plastic flow of hot metal during forging operations. The steel is supplied in three general hardness ranges and is available also in a prehardened untempered condition for tempering after machining to a hardness beyond machinability.

BREVITY—Identify by IEN - 961 If you write the maker

## HEATING . . Dielectric equipment to preheat molded plastic preforms

**Source:** AIRTRONICS MFG. CO.
5143 W. San Fernando Road, Los Angeles 39, Calif.

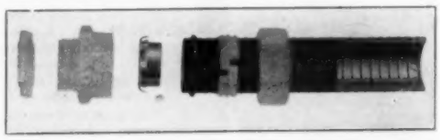
**Capacity** is 12 oz. of general-purpose molding material per minute with this new Model-CF dielectric machine. It mounts 6 ½-in. platens and adjusts for preforms to 2¼ in. in height. The upper platen can be set close to the work for control of the power output.

**Assembly** is on a cabinet measuring 13½ by 17¼ by 24 inches. Operation is on 220-volt 60-cycle single-phase ac. Weight is 110 pounds. Control equipment includes a meter and electric timer. List price is $1,150.

BREVITY—Identify by IEN - 962 If you write the maker

## CONDUIT . . Liquid tight, flexible, ⅜ to 1¼ in. for machine wiring

**Source:** AMERICAN BRASS CO.
696-700 S. Main St., Waterbury 20, Conn.



**Recently improved** design of the company's Sealtite flexible electric conduit is shown in the illustration. It includes a flexible-tube core with a copper wire wound with the tube for overall grounding, an extruded synthetic oil-proof and liquid-tight jacket, a synthetic O-ring gasket and a metal grounding bushing. The O-ring seals when standard fittings are applied at the ends and are tightened in place.

**Five sizes** have nominal inside diameters of ⅜ to 1¼ inches. The line provides for minimum bending radius from 8 to 21 inches. The conduit is sold in long random lengths to cut and apply on the job.

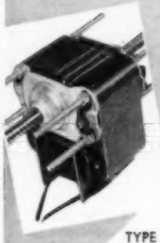
*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 963 If you write the maker

RAYTHEON

fractional hp MOTORS

CONCENTRATED POWER



"Count on Raytheon to run it." That's what design engineers are saying. They're the men who appreciate the Creative Craftsmanship that goes into Raytheon fractional hp motors. When you want to run things, FANS, BLOWERS, HEATING EQUIPMENT, appliances or what have you—count on Raytheon motors to do the job.

TYPE 350 Shaded 2-Pole, 1/40 to 1/6 hp at 3000 rpm. New Principle design provides higher efficiency, less bulk. Available with or without gear reducers. 3½" square frame. Sleeve or ball bearings. Write for Bulletin 2000.

RUSSELL ELECTRIC COMPANY
Subsidiary of Raytheon Manufacturing Co.
4601 S. Western Blvd. • Dept. A-32 • Chicago 9, Ill.

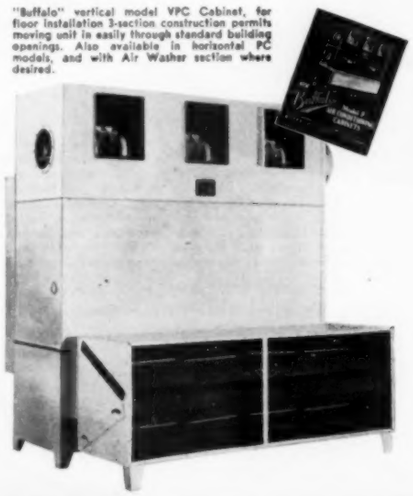
BREVITY—Identify by IEN - 964 If you write the maker

YOU CAN CONTROL YOUR PLANT'S CLIMATE with

"Buffalo" PC CABINETS

- COMPLETE climate control! Simple cooling — and dehumidifying — heating and humidifying — continuous air cleaning — all are practical with PC Cabinets as part of your system.
- Any desired combinations—may be automatically controlled.
- Low in installation and maintenance costs — write for *Bulletin 3703!*

"Buffalo" vertical model VPC Cabinet, for floor installation 3-section construction permits moving unit in easily through standard building openings. Also available in horizontal PC models, and with Air Washer section where desired.



BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, NEW YORK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in all Principal Cities

BREVITY—Identify by IEN - 966 If you write the maker

## This kitchen floor may SOLVE YOUR FLOORING PROBLEM

One important reason Tuff-Tex* Plastic-Asbestos Tile was chosen for the above job is because of its exceptional grease-resistance.

Chances are you may need this quality in work areas, too . . . where oil and grease from machines and tools hit the floor.

And you may want it in combination with other qualities such as ability to withstand heavy traffic with materials handling trucks . . . easy economical maintenance . . . quick installation . . . long service life . . . adaptability to functional or decorative design.

If these are what you want in heavy duty industrial flooring, you can't do better than to specify Tuff-Tex. It gives you all these and other qualities that add up to a great deal of floor for your money.

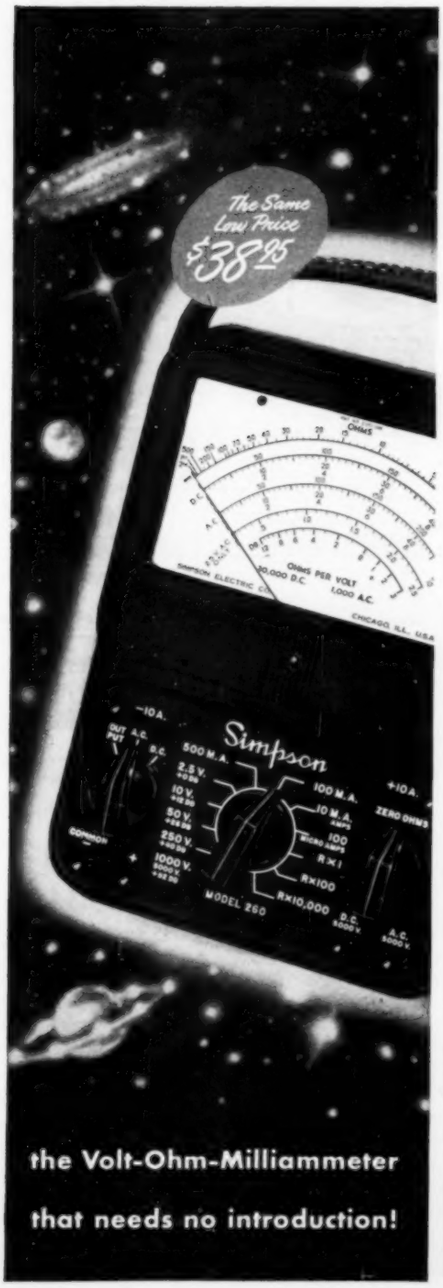
Get the complete story on Tuff-Tex, and how it can help solve your flooring problems. Write: THE TILE-TEX DIVISION. The Flintkote Company, Dept. I, 1234 McKinley St., Chicago Heights, Ill.

OFFICE AREAS BRIGHTEN UP WITH FLOORS OF TILE-TEX* . . . THE QUALITY ASPHALT TILE

**TILE-TEX** FLOORING PRODUCTS

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

BREVITY—Identify by IEN - 967 If you write the maker




the Volt-Ohm-Milliammeter that needs no introduction!

BREVITY—Identify by IEN - 969 If you write the maker

## GAGE . . Vertical micrometer unit and accessories for surface plate use

**Source: CADILLAC GAGE CO.**
**20314-18 Hoover Road, Detroit 5, Mich.**

**New height** measuring 36 in. has been added to the company's Pla-Chek line of height gages previously described IEN-2933-46. As in the previous units the gage itself is a micrometer-operated vertical spindle with gaging shoulders in the form of rings at exact 1-in. spacing. The shoulders read even inches from a tangent point on the surface plate to 36 in. above the plate when the micrometer is set at zero. The micrometer then provides means to set at any "between-inch" dimension in .0005-in. divisions.

**Attachment units** include a 3-in. riser base to bring the bottom point to 3 in. above the plate and to increase maximum height to 39 inches. A hardened button on the riser base, as shown in the illustration, is helpful in setting inside micrometers and calipers. There is a reverse plate to apply on the gage steps and a plate to set up scribers for surface work.

BREVITY—Identify by IEN - 970 If you write the maker

## PLATING . . Tin and alloy anodes for electroplating tin and tin-zinc

**Source: METAL & THERMIT CORP.**
**100 E. 42nd St., 17th Floor, New York 17, N. Y.**

**Detail data in Sheet 106**

**Three types** are included in a new line of plating anodes. They include pure tin, high-speed alloy tin, and tin-zinc. The anodes have been developed to meet a shortage in cadmium. The plating of tin-zinc is less expensive and provides excellent protection against corrosion. Limits are not critical with the most desirable alloy being about 20 per cent zinc and 80 per cent tin. The deposit resembles tin in its satin-white matte finish. The plated metal can be soldered without a flux.

BREVITY—Identify by IEN - 971 If you write the maker

## WOOD WORKING . . Wood drilling bits for power tools, 3/8 to 1 1/8 inches

**Source: HERBRAND DIVISION**
**1009-13 Stone St., Fremont, Ohio**

**Whiz Bit** is a new flat wood drill bit to fit in a 1/4-in. power-tool chuck and drill holes cross grain or with the end grain or at any angle. Material is molybdenum steel. The bits can be sharpened with a flat file. Sizes range from 3/8 to 1 1/8 inches. Lengths can be specified at 6 to 60 inches. Partial holes and knots are not problems.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 972 If you write the maker

## OPERATES INDEPENDENTLY of power source

**NEW Gasoline Engine Powered**

## HOFFCO-VAC #50 Vacuum Cleaning Portable

Now—for the first time—a heavy-duty portable that can be operated anywhere. Use it for fast, efficient cleaning where wiring expense would be excessive—in outdoor areas—in widely scattered plant locations—and anywhere else that ordinary cleaners could not be used.

7½ CUBIC FT. DUST STORAGE CAPACITY BUILT FOR HEAVY DUTY SERVICE

This 5 H.P. model provides 2-sweeper operating capacity and all other outstanding features of the electric motor driven Hoffco-Vac #50. Only exception is that power unit is a 4-cycle, single cylinder heavy-duty air-cooled engine rated at 6.8 H.P. (5.4 continuous). Flame-arresting type muffler.

WRITE FOR BULLETINS A-784 & 803

AIR APPLIANCE DIVISION

**U.S. HOFFMAN** MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

BREVITY—Identify by IEN - 973 If you write the maker

## Users Tell Our Story Best!

**163 ORDERS FROM 3 CUSTOMERS ALONE...TOTALED 1,421,402 LBS.**

## SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY **ONE MINUTE** PER SQUARE FOOT!

Think of it . . . just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

**ROCK-TRED Corporation**
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

BREVITY—Identify by IEN - 974 If you write the maker

## TRABON LUBRICATING EQUIPMENT Delivers a Measured Amount of Lubricant

- To Any Bearing . . .
- In Any Location . . .
- Under Any Condition

*In the plant of Cans, Inc., Chicago, a Trabon system services 221 points of lubrication on this machine, which produces 310 cans per minute!*

Since 1930 Trabon has been engineering, manufacturing, and installing centralized lubricating systems . . . for plain bearings, roller bearings, and ball bearings . . .

Since 1922 Trabon has been helping industry solve its lubricating and bearing problems.

*Call Trabon in regard to your lubrication requirements.*

Trabon
OIL AND GREASE SYSTEMS

**TRABON ENGINEERING CORP.**
1814 East 40th Street
Cleveland 3, Ohio

BREVITY—Identify by IEN - 975 If you write the maker

**TO INSURE PROMPT DELIVERIES . . .**

## "STANDARD" RECOMMENDS STANDARDS

You can depend on prompt deliveries of UNBRAKO Products when you use *standard sizes.*

For, despite shortages, stepped-up demand and other problems of the emergency, we've been able to keep full stocks of UNBRAKO "*standards*" on our dealers' shelves—ready for immediate delivery.

And that's not all . . . Every time you use a *standard size* UNBRAKO it represents a substantial saving over the cost of a "special."

Be sure you have our latest catalog of UNBRAKO *standard* products. Send for your copy of Bulletin 643-R *today.*

SOCKET **UNBRAKO** SCREWS

**SPS** STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 976 if you write the maker

# ADEL

**for PEAK PERFORMANCE**

## Industrial Hydraulic Equipment

ADEL Hydraulic Valves and Pumps are setting new and ever higher standards for precision in manufacturing and efficient performance in operation. Following are but a few of the wide variety of models to meet all operating conditions.

**GEAR-TYPE HYDRAULIC PUMPS**

1000 psi, 1800 rpm, 1.5 to 46.8 gpm.

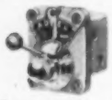
**DIRECTIONAL CONTROL VALVES**

4-way, 1500 psi, flows to 28 gpm.

**BY-PASS VALVES**

Relief, Sequence Unloading, 50-1500 psi.

**VOLUME (FLOW) CONTROL VALVES**



Compensated type, no drain line, 1500 psi.

**PILOT VALVES**

With or without dog or lever. 1000 psi.

**CHECK VALVES**

Free flow, one direction only. 3000 psi.

*A few select territories are still available to progressive distributors of hydraulic equipment. Inquiries invited.*

*Write for complete engineering specifications and counsel*

**ADEL DIVISION OF GENERAL METALS CORPORATION**
**10763 VAN OWEN STREET • BURBANK, CALIFORNIA**

DISTRIBUTORS: Air & Hydraulic Engineering Co., New Haven, Conn. • Russ Chamberlin Company, Portland, Oregon • J. Boyd Coates, Philadelphia, Pa. • Frank T. Donnelly Company, Pittsburgh, Pa. • Haskel Engineering & Supply Co., San Francisco, Calif. • Haskel Engineering & Supply Co., Glendale Calif. • Hydraulic Brake Supply Co., Phoenix, Ariz. • Lincoln Supply Co., Providence, R. I. • Scott Equipment and Engineering Company, Dayton, Ohio • H. F. Soderling Co., Seattle, Wash. • Hebert Taylor & Sons, Salt Lake City, Utah • Wyatt Sales Co., Cleveland, Ohio • Corby Supply Company, St. Louis, Mo. • Industrial Air & Hydraulic Equipment Co., Detroit, Mich.

BREVITY—Identify by IEN - 977 if you write the maker

**To develop parts that would be strong, lightweight, and capable of being produced rapidly and economically in large quantities to close tolerances.**

**Dial Hub and Adjusting Screw, engineered by GRC . . . *still more* GRC precision zinc die castings to help manufacturers solve their small parts problems.**

**New, improved Bathroom Scale (800 series).**

***TINY, PRECISION ZINC DIE CASTINGS**

BORG-ERICKSON is just *one* of the hundreds of manufacturers who are successfully producing new designs and new products and enjoying new economies with GRC's revolutionary high-speed, mass production methods. Simple or intricate—GRC zinc die castings as small as .000004 of a lb. are turned out *automatically* . . . completely trimmed ready for use . . . from 100,000 pieces to many millions . . . *smallness unlimited* . . . at amazingly low cost *to you!*

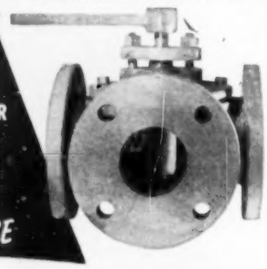
*Bulletin and Samples Available On Request*

**GRIES REPRODUCER CORP.**
133rd St. & Willow Ave., New York 54

MAX. WT.—½ OZ.
MAX. LGTH.—1¾"
SMALLNESS UNLIMITED

BREVITY—Identify by IEN - 978 if you write the maker

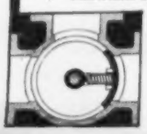
**The simplicity of HONEYWELL 3-WAY TRANSFER VALVES will *SAVE YOU MONEY and SPACE***



THE HONEYWELL transfer valve is a simple, compact valve designed for diverting flow from one line to another—such as cooling water from one condenser to another or oil from one strainer to another. It replaces two conventional valves and fittings. Operates by movement of single lever . . . no chance of opening or closing both lines simultaneously.

Sizes 1½ to 8 inches . . . straight-way or three-way . . . screwed or flanged. Available in high tensile iron with iron or bronze trim; bronze with bronze trim. Other materials and larger sizes on request. Body ratings 125-150 lbs. ASA facing and drilling. Maximum inlet pressures 30 psi to 10 psi. Cost is low . . . act quickly.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, *Industrial Division,* 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.



**Honeywell**
VALVE PRODUCTS

BREVITY—Identify by IEN - 979 if you write the maker

## HOIST . . Hand ratchet unit for lifting and pulling, ¾ to 3 ton

**Source: YALE & TOWNE MFG. CO.**
**11002 Roosevelt Blvd., Philadelphia 15, Pa.**

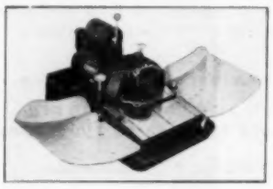
**Model D** is a new design of the company's Pul-Lift hoist to employ an alloy-steel hardened link chain. It is made in three ratings of ¾, 1½ and 3 ton. It applies in load lifting and lowering and also in pulling operations to include equipment positioning, trolley-line stretching, work holding. The ratchet handle operates in a short or long arc as desired at any location around a complete circle. The action is direct in the smallest unit, through an intermediate pinion and gear on the other two. The ¾ and 1½-ton units are single-line units. The 3-ton assembly adds a lower hook block to handle its load.

**List prices** are $53 to $94 for standard lift range of 55, 53 and 54 inches. Extra lift lists at $2 to $4.40 per foot. Pull on the 17-in. lever to lift a capacity load is 72, 74 and 82 pounds. Minimum distance between hooks is 13, 15 and 17 inches. Weights are 15, 25 and 36 pounds. The hooks are forged steel in a safety design that will open slowly under severe overload. A brake sustains the load in normal operation when pull on the handle is released. Direction is determined by positioning a pawl on the hoist housing.

BREVITY—Identify by IEN - 980 if you write the maker

## GRINDING . . Bench type machine and diamond cup wheel for carbide tools

**Source: WICKMAN MFG. CO.**
**15531 Woodrow Wilson Ave., Detroit 3, Mich.**



**Model GF-2A** is new design of the company's previously developed carbide-tool grinder. It mounts a reversible 1-hp. motor equipped with a precision ball-bearing spindle to carry a 6 by 1¼-in. diamond cup wheel supplied by the company. Other abrasive wheels can be used. At the rear of the motor is a direct-connected impeller pump to circulate coolant at 12 gph. from the filter-equipped sump in the base.

**The new design** mounts its 8 by 12 in. table or trunnions with knurled-head screws that can be retracted or positioned in any of three holes in the table sides. This permits advancing the table as the wheel wears independent of the angular adjustment for position between 5 deg. above horizontal and 15 deg. below. A milled slot in the table takes a protractor the company can furnish to specification. Dimensions are about 17 by 27 by 17 inches. Weight is 134 pounds. Additional equipment includes a second wheel guard for ordinary abrasive wheels and two splash protectors for the table sides.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50*

BREVITY—Identify by IEN - 981 if you write the maker

IMPROVED Spring Clamp in three convenient sizes

"C" Clamps Openings 1 in. to 18 in.

Hand Screw All popular sizes

Quick Clamps Openings 4 in. to 5 ft.

Steel Bar Clamps Openings 2 ft. to 12 ft.

## INDIVIDUALLY TESTED

*To Insure Better Performance*

**HARGRAVE**

• Hargrave Clamps have been constantly improved with the aid of skilled mechanics to offer greater operating advantages and increased durability. Individually tested, they must be stronger, tougher and flawfree. Made in openings from ¾ in. to 12 ft., from ½ in. to 16 in. deep. Write for Catalog showing the complete line of Hargrave Individually Tested Clamps, Chisels, Punches, Brace Wrenches, Star Drills, Washer Cutters, File Cleaners, etc.

**THE CINCINNATI TOOL CO.**
1953 Waverly, Cinn. 12, Ohio

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**HARGRAVE** Tested Tools
**THE CINCINNATI TOOL COMPANY**

BREVITY—Identify by IEN - 982 if you write the maker

## BURT KNOW-HOW ASSURES PROPER ENGINEERING FOR EFFICIENT VENTILATION

For half a century, Burt has been recognized as a leader in ventilating equipment. Over this period Burt engineers have gained invaluable training in ventilating design and application that only actual experience can supply. This specialized knowledge is available to help solve your ventilating problems on request. It is good assurance of complete satisfaction later.

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ROOF VENTILATORS • OIL FILTERS
EXHAUST HEADS
909 So. High St., Akron 11, Ohio

SEND FOR CATALOGS
• Burt Engineers are glad to help on plans

BREVITY—Identify by IEN - 983 if you write the maker

## GET GREATER HOLDING POWER

**CONTROLLED TENSION**
**OF GARRETT SPRING LOCK WASHERS**
**Assures Longer . . . Tighter Assemblies**

The washer's live spring action—power zone—determines the life of your assemblies. Garrett's exclusive *Controlled Tension* built into every spring lock washer assures greater spring tension of the correct pressure on every bolt and nut for longer holding power.

Garrett produces spring lock washers by the millions every-day to meet every requirement. Made of high carbon steel, bronze, aluminum, stainless steel or monel metal . . . finished in cadmium, nickel, brass or copper.

**WASHERS TO ARMED FORCES SPECIFICATIONS**

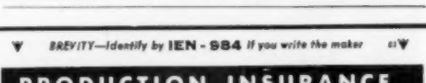
Garrett makes a complete line of lock washers to meet all Armed Forces specifications . . . some of them are:

AN 935 BECX 1 BECX 2 BECX 3

We also manufacture all types of flat washers to meet Armed Forces specifications.

Go to Garrett for quick deliveries.
Write today for complete catalog.

GEORGE K. GARRETT COMPANY, INC.
N. 6th TIOGA STREETS PHILADELPHIA 24, PA.
MANUFACTURERS OF




**Garrett** OF PENNSYLVANIA

BREVITY—Identify by IEN - 984 if you write the maker

## PRODUCTION INSURANCE *against* GAS CURTAILMENT

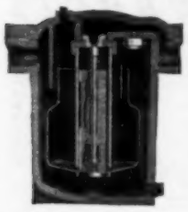
**ASSURED with VAPOFIER**

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

*Write for complete details on the advantages of firing with Vapofier.*

**VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.**

BREVITY—Identify by IEN - 985 if you write the maker



# ILLINOIS STEAM TRAP

**Simple — has only two moving parts**

**Valve Stem Travels Independent of Bucket**—no other trap has this feature.

**Instantaneous Valve Action**—either wide open or tight shut will not dribble on partial closing of valve under slow condensation rates.

**Wire Drawing Impossible**—valve has snap action.

**Simple**—moving parts are valve and bucket.

**Cannot Air Bind**—vents air continuously without loss of steam.

**Cannot Blow Steam**—always water sealed.

**Surface Discharge**—flushes out all grease and sludge.

**Valve Seat**—of special alloy, fully guaranteed.

**Inspection Easy**—Without disturbing piping.

**Works Equally Well on All Fluids**—compressed air lines, air separators, air aftercoolers.

*Write for Bulletin 35*

**ILLINOIS ENGINEERING COMPANY**
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

BREVITY—Identify by IEN - 986 if you write the maker

# Only genuine RIDGID guarantees economy

**This Work-Saver RIDGID assures you . . . "No pipe wrench housing repair expense."**

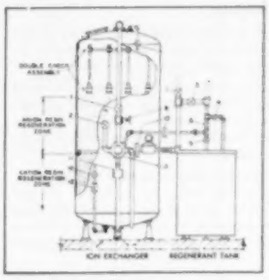
● You'll find no substitute for the smart-working, long-lasting qualities that have made RIDGID the world's most popular pipe wrench. Breakproof housing, full-floating hookjaw with handy pipe scale, replaceable heeljaw, adjusting nut that spins easily in all sizes, 6" to 60", comfort-grip handle—these plus the RIDGID name mean more service and tool satisfaction for your money. Buy at your Supply House.

**RIDGID**
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 988 if you write the maker

## WATER TREATING . . Demineralizer delivers equivalent of distilled water

**Source: ELGIN SOFTENER CORP.**
**132-36 N. Grove Ave., Elgin, Ill.**




**MonoFlo and Ultra** designate two new assemblies of water-deionizing equipment to remove mineral content from raw water and deliver the equivalent of distilled water. Actually the quality exceeds that of distilled water in its test for specific electrical resistance which reads about 5,000,000 ohms for the demineralized water and 50,000 ohms for distilled water. The MonoFlo equipment applies in normal service requiring mineral-free water. The Ultra equipment also removes carbon dioxide and silica.

**Standard sizes** employ exchanger tanks measuring from 10 to 48 in. in diameter by 72 to 84 in. in height. Capacity is 15,000 to 40,000 grains of exchange. Flow rate is 3 to 125 gpm. Larger sizes are available to specification.

**The assembly** is characterized by its use of a single tank for the two resinous zeolite exchangers, one for the positively charged cations and one for the negatively charged anions. The two are intermixed in the tank to be divided by backwashing because of their market difference in density into two zones, one above the other. Operation is in connection with a multiport valve and supplementary controls for the backwash, regeneration by acid and caustic, mixing and return to service.

BREVITY—Identify by IEN - 989 if you write the maker

## CHUCK . . Quick change design for use in a milling machine spindle

**Source: S. JOHNSON CO.**
**228-32 E. Ohio St., Chicago 11, Ill.**

**Alloy steel,** hardened and ground, is employed in the three parts comprising this new Johansson precision quick-change chuck to hold straight-shank milling cutters and shell-mill arbors. Quick-Grip is the trade name. Five sizes are included in the line to apply in machine spindles with Morse, B & S or American Standard tapers. Capacity in tool-shank diameter is ⅛ to 1½ in. for which fifteen interchangeable collet sleeves are available.

**The collet** rides in a taper in the body to close in on the tool shank when the nut is applied and turned in its bayonet lock. Sufficient grip is developed to drive a 5-in. end mill in a heavy cut in a machining operation.

*All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88*

BREVITY—Identify by IEN - 990 if you write the maker

# LUSTRA Double Duty Lamps cut replacements in 1/2

YOU'LL REALLY go to town on savings with the *Lustra Double Duty Lamp.* This lamp is the perfect answer for high bay and other locations that are hard to reach. It's specially designed for maximum life . . . saves money by slashing replacement and maintenance costs.

*And for MORE savings . . .*

**LUSTRA FLUORESCENT TUBES** . . . more light . . . longer life. Full range of colors: Soft White, Warm White, Deluxe Warm White, 3500° White, Cool White, Deluxe Cool White, Daylight.

**LUSTRA REFLECTOR LAMPS,** with inside silvered sealed beam reflector, direct increased light on the work area . . . give extra service life!

Send for catalog and sample lamps to Lustra Corporation, Dept. P-1, 36 Washington St., Brooklyn 1, New York.

**Lustra**
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

BREVITY—Identify by IEN - 991 if you write the maker

**SLITTING and SLOTTING SAW BLADES**

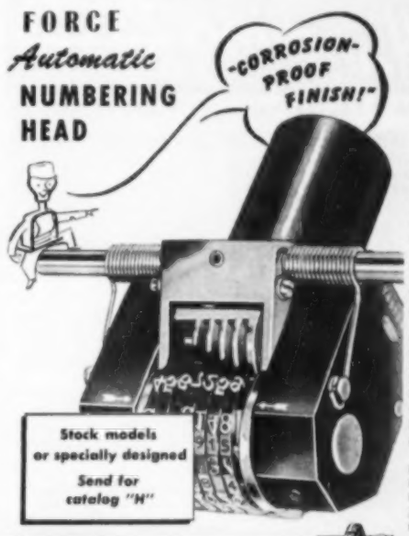
Every wanted advantage in modern slitting and slotting, PLUS M. & M.'s exclusive dual drive. Only Motch & Merryweather slitting and slotting blades bring you 4 great features: (1) Triple-Chip efficiency; (2) dual drive adaptation; (3) blade interchangeability (fewer blades required); (4) special sizes.

*Stock sizes carried by your local dealer.*

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO
AT YOUR COMMAND • AN UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 992 if you write the maker

# FORCE Automatic NUMBERING HEAD



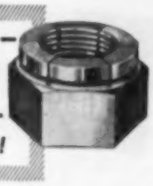

THREE QUARTERS OF A CENTURY'S SERVICE

**WM. A. FORCE**
& COMPANY, INCORPORATED
718 NICHOLS AVENUE, BROOKLYN 8, N. Y.

BREVITY—Identify by IEN - 993 if you write the maker

**A fastener AIN'T, if — it works loose.**

**The "FLEXLOC" IS — because it won't!**



**FLEXLOC**
ONE-PIECE, ALL-METAL
**STOP- and LOCK-NUT**

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

**SPS** STANDARD PRESSED STEEL CO.
JENKINTOWN 54, PENNSYLVANIA

BREVITY—Identify by IEN - 994 if you write the maker

## Engelhard meets every

# THERMOCOUPLE NEED!

**NOBLE METAL THERMOELEMENTS AND THIMBLES**

platinum vs. platinum-rhodium—repaired at substantial savings, with credit for reclaimed metal.

**BASE METAL THERMOELEMENTS**

chromel vs. alumel iron vs constantan copper vs. constantan.

**STANDARD INSULATORS**

All types and sizes.

**PRIMARY AND SECONDARY PROTECTION TUBES**

**TERMINAL HEADS AND LEAD WIRE, ETC.**

At Engelhard, you will find a complete line of thermocouples and accessories to meet all requirements. The individual parts of Engelhard thermocouples are selected and assembled for your specific conditions of atmosphere and temperature. You can rely on Engelhard's more than 40 years of research and instrument-building experience to solve your temperature measurement problems. Write for complete information today.

**CHARLES ENGELHARD, INC.**

850 PASSAIC AVE., EAST NEWARK, N. J.

BREVITY—Identify by IEN - 995 if you write the maker

# Handling BAGGED GOODS?

**Do it *FASTER*—more *EFFICIENTLY* with a POWELL Job-Designed container . . .**

Style 412
WHSE Stacking Unit

Container pictured here was Job-Designed by Powell to safely and efficiently transport and store bags of carbon black and synthetic rubber elements for a leading rubber manufacturer.
It affords easy accessibility to a single bag or a container full. Can be used as a bin. Speeds production and inventory. Keeps storeroom neat. Tiers to any desired height.
Powell Job-Designed equipment best suits the job, because it was built for the job. Powell representatives in principal cities.

Send inquiries to Dept. 611

POWELL PRESSED STEEL

THE POWELL PRESSED STEEL CO. • HUBBARD, OHIO
ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT.

BREVITY—Identify by IEN - 996 if you write the maker

# SURE CURE FOR PUMP HEADACHES

TUTHILL PUMPS

Forget pump worries. Tuthill small pumps are recognized the world over for their dependability in lubrication, coolant, hydraulic and liquid transfer service. These internal-gear type rotary pumps are available in capacities up to 200 g.p.m. and pressures up to 400 p.s.i. Wide choice of porting and mounting arrangements in both packed and mechanically sealed pumps. Write for General Catalog.

**TUTHILL PUMP COMPANY**

939 East 95th Street, Chicago 19, Illinois

# JANUARY 1951 INDEX TO ALL PRODUCTS

## How to find what you need:

**Leaf through the issue** with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

**Next use this index** to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

**Now take one subject** at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

**If you have trouble** in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our sixteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.


**A**

Abrasives 14, 36, 83
Adhesives 93
Aerating 10
AIR CONDITIONING 70, 98
Alloys 53
Aluminum 27
Amplifiers, Magnetic 13
Aprons 90
Assembling 49*

**B**

Balancing 42, 93
Balls 46, 92
Bearings 2, 5, 24*, 46, 88, 62, 80, 90, 96
Bellows, Metal 24*, 51, 58*
BELTS
Conveyor 38
Fastenings 78, 91
Transmission 3, 38*, 43
Benches 51*
Bending 6, 10, 32, 37, 58, 86
Bins 19
Blowers 21, 33, 46, 74
BOILERS 49, 57*, 86
Bolts 26
Booths, Telephone 56
Boring 10, 31, 32*, 38*, 44*, 54*
Boxes 4, 9*, 16, 30, 46, 53, 66, 87*, 92, 95, 102
Brazing 2, 62*
Broaches, Keyway Cutting 78
Bronze 20
BRUSHES 41, 72, 75
Buckets 15*, 55
Bumpers 60
Burners 54
Burring 3, 33, 65
Bushings, Drill 40, 43, 81

**C**

Cabinets 82
Cable, Electric 3, 15, 18*
CALCULATING 93*
Calendars 24*
Carbide Parts 3*
Castors 8, 42*, 44, 56, 76, 80
Catalogs, Industrial 87
CEMENT
Iron 19
Portland 3
Centrifugals 44
CHAIN
Bead 66
Fittings 72
Load 56
Transmission 41, 49
Chamfering 3, 22
Chucks 22*, 57*, 101*
Circuit Breakers 15
Clamps 8, 26, 52, 53, 75, 93, 96, 100
CLEANING
Blast 24, 36, 56
Blower 31, 33
Descaling 16
Drain 70
Floor 22, 41, 55, 92
Materials 30, 36, 42, 74, 92
Spray 22
Vacuum 20, 36, 40, 63, 99
Vapor 20
Washing 26*, 40*, 48*, 66*
Clothing, Protective 40*, 90
Clutches 1*, 45
Communicating 56, 61*, 83*, 83, 86, 96*
COMPRESSORS 20, 34, 39, 44, 89*
Conductive Materials 81
Conductors, Electric 3, 15, 18*, 81
Conduit 98*
Connectors, Electric 18*, 31*, 34*, 36, 43, 55, 66, 80
Construction 1*, 66*, 69*, 69, 98*
Contacts, Electric 88
CONTROLS
Electronic 19*, 28
Humidity 1*
Level 10, 16
Pressure 31*, 57
Process 7, 37, 54*, 61, 95*
Temperature 22, 25, 37, 57, 83*
CONVEYING
Belt 8*, 30, 54, 55
Overhead 2, 6, 14, 47
Pneumatic 10, 24, 63
Roller 6, 7, 43*, 104
Cooling 15, 27*, 41, 46, 47*, 64*, 67*, 78*, 89, 97*
Corrosion Proofing 51, 54, 66, 89
Counting 11*, 17, 18*, 23, 59, 80
Couplings, Shaft 10*, 20, 85
COVERS
Dock 60
Furnace 42*
Guide Pin 26
Cranes 25, 37, 48, 49
Crushing 82
Cutouts, Overload 10*, 85
CUTTING
Machines 22, 45, 77
Service 57*
Tools 33, 60, 88, 96
Cylinders, Power 8, 39, 40, 58, 87

**D**

Dampers 28
Desks 53*
Detectors, Leak 52
Die Casting 41*
Die Castings 100
Directories 79*
Disinfecting 74
Dispensing 21*, 31, 57, 72, 87
Distilling 88
DOORS 51
Hardware 80
Operators 53
Drafting 5*, 38, 48
DRILLING
Attachments 90*
Bushings 40, 43 81
Heads 16
Machines 3, 4, 13*, 18, 77*
Tools 29*, 50, 99*, 104
DRIVES
Adjustable Speed 1*, 13
Components 1*, 3, 5, 7, 10*, 14, 20*, 20, 38*, 41, 42, 45, 49, 54*, 58, 78, 85
Hydraulic 68
Speed Reducer 9, 14, 26, 29, 48, 60*, 60, 64, 75*
Variable Speed 5, 26, 28, 39*, 48, 79*
Drying 83
Dust Collecting 4, 11, 19, 45, 47*, 56, 59, 65, 81*

**E**

Electrical Products 43
Electronic Products 83
ELEVATORS 8, 29, 104
Engineering 32*
Engines 23, 52, 60, 72
Engraving 97
Etching 1*
Expanding 40*
EXTINGUISHING 2, 31, 61, 84*

**F**

Fabrics 84
Fans 9*, 30, 73
Fastenings 9, 11, 26, 28*, 34, 40, 43, 57, 67, 69, 74, 79, 83, 93, 95, 99, 100, 101
Feeding 9, 22*, 23*, 30*, 51, 61, 69, 83*, 89, 90*, 92*, 93
Fence 65
Filing 10, 30, 54
Filling 32
FILTERING
Air 4
Liquid 69*, 72, 82
Flexible Shaft Equipment 46
Floats 47
Floors 3, 5, 7, 11*, 58, 63, 91, 99, 103, 104
Fluxes 55*
Foundry Equipment 29*
Fountains, Drinking 64, 89
Furnaces 87*
Furniture 51*, 53*, 97
Fuses 27
GAGES
Dimensional 33*, 45*, 46*, 52*, 55*, 67, 68*, 82, 87*, 93*, 99*
Pressure 54, 75*, 95
Tension 14
Vacuum 59*

**G**

Gaskets 7, 41
Gears 14, 79
GENERATORS
Electric 58*
Gas 100
Steam 49, 57*, 86
Glass 59, 74
Gloves 15 16, 21, 23*, 43
Goggles 27, 65
Grabs 8, 52
Grating, Floor 7, 63
GRINDING
Belts 53
Fixtures 17*
Machines 15*, 16, 46, 64*, 65, 69*, 96*, 100*
Service 79
Spindles 33
Tools 34*, 25, 57
Wheels 5*, 45, 49, 73, 74
Wheel Dressers 51
Guides, Band Saw 14

**H**

Hammers 12, 21, 52
Handling 6, 7*, 8, 9*, 11, 13*, 52, 53, 55, 56*, 56, 63, 66, 91, 92*, 92, 95, 102
Hard Facing 53
HEADS
Drill 16
Tapping 87*
Heat Exchanging 14, 41, 46, 47*, 67*, 78*
Heat Treating 53*, 87*, 96*
HEATING
Elements 5, 6*, 62*, 80
High Frequency 98*
Liquid 41, 46, 85
Space 11, 36*, 44, 47, 84
Hinges 104
Hoists 25, 45, 100*
Hoods 14
Hoppers 9, 51
HOSE
Fittings 4, 16, 31, 53
Metal 13, 49, 62
Standard 9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# AND SERVICES IN THIS ISSUE

JANUARY 1951


Humidifying 53
Hygrometers 1*

I

Indexing 49
Indicators, Temperature 83
Ink 9*, 17
Inserts, Thread 83
INSULATING
Electric 38, 83*, 95, 103
Thermal 2
Isolating, Vibration 12, 46*
Intensifiers, Hydraulic 56*

J

Jacks 2, 39, 43, 93*, 96
Jewels, Industrial 8
JOINTS
Pipe 8, 50, 103
Shaft 58

K

Knurling 49*

L

LABELS 18, 58, 71, 81*
Ladders 32*, 94
Lamps 101
Lamp Tools 11
Lapping 2*, 14, 79
LATHES 2, 9, 24*, 94
Tools 42*
Layout 48
Lighting 21, 43, 46*, 47, 56*, 84, 101
Lights, Indicating 57
Loading 55
Locknuts 57, 74, 101
Lockwashers 67, 100
Locomotives 7*
LUBRICATING
Equipment 9, 55, 72, 75, 99
Materials 3, 24*, 42, 51*, 52
Lumber, Treated 87

M

Magnets 104
Management 15*, 25*, 30*
MARKING
Machines 94, 97
Materials 9*, 17, 18, 58, 71, 81*, 85
Tools 38, 49*, 64, 68, 81, 101
Masking 48, 85
Masks 29
Mats, Floor 62*
Melting 31
METALS
Design Strengthened 3
Laminated 62*, 88
Parts 11, 41, 78, 104
Metal Treating 47*
METERS
Air Velocity 102
Electric 38, 85, 99
Microscopes 21*
Milling 33, 81*
Mixing 35, 61, 90*
Molybdenum 4
Monorail 2, 6, 14, 47
MOTORS
Control 11, 12, 14*, 37, 44, 45, 48
Electric 10, 28, 44, 51, 59, 60, 73*, 73, 75*, 98
Pneumatic 28
Mowing 31*

N

Nozzles 23, 24, 31, 74, 78, 90
Numbering 101
Nut Driving 9
Nuts 40, 67

O

Oscilloscopes 103

P

PACKAGING
Containers 13*, 16*, 25
Equipment 11, 22, 27*, 32, 35*, 36*
Materials 3*, 25*, 35, 51, 66, 69
Packings 32
PAINTING
Equipment 40*, 52*, 72
Materials 27, 33
Pallets 54*
Papers 35, 50, 75, 79
Pencils 38
Pens, Instrument 38
Photographing 13*
Piling 69
PIPE
Coils 46
Fittings 8, 26, 32, 62, 79*, 79, 103
Insulated 62
PLASTICS
Materials 25*, 27, 34, 71, 91
Molding Equipment 20*
Products 38, 67, 70, 83*, 85*, 86, 92, 95
Plates, Surface 68
Plating 1*, 21*, 67*, 99*
Plywood 96
Polishing 25, 73*
PRESSES
Attachments 69, 94
Hydraulic 56, 59, 91*
Mechanical 12*, 13, 21*, 27*, 30*, 33*, 94
Pneumatic 21
Tools 5, 10, 26, 32, 39*
PRINTING
Equipment 17*, 91
Materials 29, 50, 59*, 79
Processing 25*, 32*, 90*
Projecting 67
Protecting 14, 15, 16*, 18, 21, 23*, 27, 29, 40*, 63, 65, 69, 98
Pulling 4, 27, 100*, 103
Pulverizing 64
PUMPS
Centrifugal 19, 33*, 40, 84*, 95*, 98
Hand 21*, 87
Hydraulic 65*, 100
Jacketed 94*
Pneumatic 50
Reciprocating 61
Rotary 18, 31, 40, 47, 94*, 102
Vacuum 20, 52
Punching 5
Pyrometers 18, 76

R

Racks 19, 71, 89, 92, 97
RAILS 69
Clamps 93
Reaming 45*, 54
Recording Instruments 28*, 38, 61, 78
Rectifiers 10
Reducers, Speed 9, 14, 26, 29, 40, 60*, 60, 64, 75*
Reels 92*, 94
Refractories 73
Refrigerating 22*, 46
REGISTER, MANUFACTURERS' 50*
Relays 6*, 19*, 28*, 42, 61, 64*, 92
Respirators 18, 27, 67
Riveting 39, 43*
Rivets 67, 69
Rock Drilling 19
Rolls, Machine 13, 77
ROOFS 89*
Rubber Products 15, 38*, 60

S

Sanding 17, 30*, 36*, 90*
Sapphire, Synthetic 8
SAWING
Attachments 64
Blades 38, 55, 101
Machines 7, 12, 40, 54, 76, 87, 88
Machine Parts 14, 26
Tools 10, 42, 83
Scaffolds 17, 29*, 32, 33*, 34, 51, 64
Screens 74
Screw Driving 9, 63, 98
Screws 9, 26, 28, 43, 67, 69, 79, 93, 95, 99
Sealing 6, 7, 12, 16, 19, 22, 32, 41, 42*, 60
Selling 36*
SEPARATING 4, 15
Shaping 81*
Shearing 34*, 83, 85
Sheaves 5, 39*, 48
Shipping Containers 30
Shovels 1*, 69*
SHREDDING 64, 79
Signaling 3*, 57, 86*, 97, 102
Skids 4, 66, 91
Slitting 57*, 83
Soldering 27*, 35, 55*, 65, 73*, 82, 97*
Solenoids 5
Spraying 23*, 23, 72, 78, 90
SPREADING 24, 51*, 89*
Springs 39
Sprockets 7, 20*, 41, 49
Stampings 11, 104
Stapling 24, 57, 66, 75
Steels 6, 13, 19, 32, 46*, 52, 57, 59*, 73*, 76, 84, 90*, 92*, 94*, 98*
STERILIZING 11*, 95
Stools 97
Storing 13, 19, 46, 71, 82, 87*, 89, 92, 97
Strainers 6, 72
Strapping 46, 47, 50, 67
Sweeping 41
Switches 12, 15, 16, 26, 44*, 45*, 46, 68, 73*, 77, 92*, 96, 97

T

Tablet Making 21*
TACHOMETERS 34
Tackers 66, 75
Tanks, Steel 13*, 13
Tapes 45, 49*, 57*, 95, 103
Tapping 50, 87*
TESTING
Electric 30, 31*
Electronic 43*, 103
Flaw 37
Foundry Sand 76*
Gear 65*
Hardness 39*
Illumination 78
Impact 28*, 58*
Laboratory 34*
Melting Point 55*
Performance 3
Phase Sequence 12*
Radioactivity 61*
Spring 20*
Tension 54, 55*, 77*
Vibration 75*
Vision 70
Thermocouples 86, 98, 102
Thermometers 39, 63*
Thermostats 30*, 37*, 45, 77
Threading 10, 19*, 29*, 50, 60*, 81, 87*, 94*
Timing 23, 35*, 42, 44, 59, 78, 75*, 95*
TIRES 29, 44, 67, 72*
Tractors 31*, 98*
Trailers 23
Tramrail 2, 6, 14, 47
Transfers, Decal 3*
Transformers 63
Traps 4, 15, 22, 24, 77, 101
Trolleys, Conveyor 2
TRUCKS
Attachments 79*
Hand 5*, 16, 28, 57, 66, 91, 97
Power 14*, 17*, 26*, 35*, 43, 70
Power Lift 12, 28, 61, 64, 70
Trailer 23
TUBES
Finned 14
Flexible 13, 49, 62
Plastic 95
Standard 11, 36, 41
Turntables 23*

U

Unions, Pipe 32
Unloading 55

V

VALVES
Bin 18
Blow 74
Jacketed 69
Line 28, 30*, 31, 38, 42*, 62, 69, 69*, 77*, 81, 100, 104
Mixing 48, 69
Operating 87, 88, 90, 100, 102, 103
Power Operated 8*, 69, 97*
Regulated 22, 25, 37, 66, 83*, 91*
Relief 35*, 100
Repair Parts 33
Vent 4
Ventilating 9*, 38, 46, 73, 74, 100
Vibrating 61*, 83*, 89
Vises 24, 37*, 38, 41*, 71, 86, 90, 96

W

Wadding 69
Washers 11
Water Treating 26*, 34*, 88, 99*, 101*
Weighing 23, 55, 88, 89
WELDING
Arc 36*, 82
Materials 6*, 25*, 53
Positioners 91*
Resistance 91*
WHEELS
Band Saw 26
Truck 8, 36, 44, 76, 85*
Winches 6
Winding 10*, 63*
WIRE
Cloth 59
Parts 35
Rope Fittings 68, 72
Rope Slings 46
Wood Working 18, 40, 76, 90*, 99*
Wrenches 18*, 35, 39, 68*, 71, 96, 101



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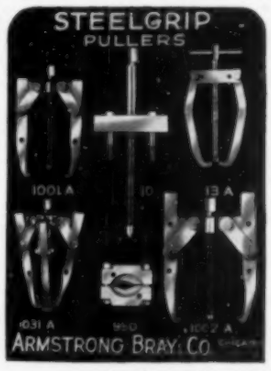


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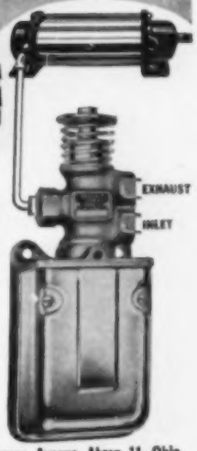


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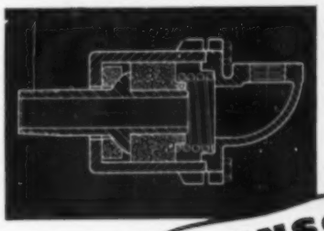

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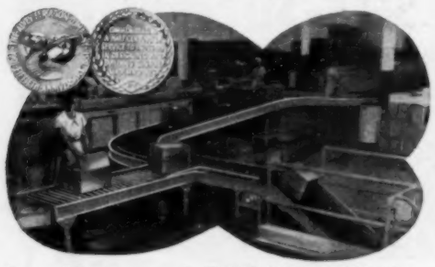

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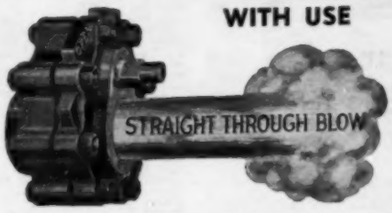


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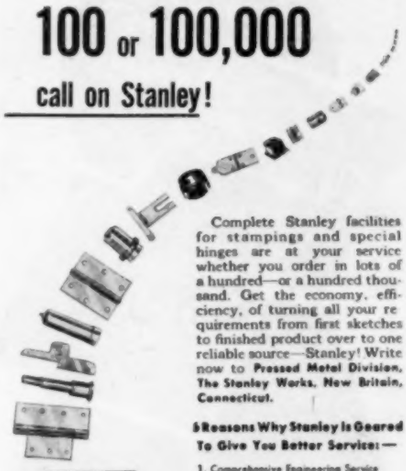

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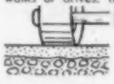

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